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HELMINTHOLOGICAL ABSTRACTS

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For the Year 1950



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145—Acta Medica Italica di Malattie Infettive e Parassitarie.

- a. SOFIA, F., 1950.—“Su un raro caso di localizzazione cerebrale dello *Schistosoma mansoni* in un ragazzo eritreo.” 5 (1), 13-16. [English, French & German summaries pp. 15-16.]

(145a) The tenth recorded instance of cerebral invasion with *Schistosoma mansoni* is reported from Addis Ababa. Manifestations of Jacksonian type were observed in the left side of the mouth, the muscles of the neck and of the eyes, and the soft palate. On the basis of the clinical picture the lesion was located at the base of the right frontal convolution. The intestinal and cerebral lesions responded to treatment with antimony and thus confirmed the diagnosis.

R.T.L.

146—Acta Pediatrica Española.

- a. GARRIDO-LESTACHE Y DÍAZ, J. & GARRIDO-LESTACHE Y CABRERA, J., 1950.—“Quistes hidatídicos de pulmón en la infancia.” 8 (88), 431-436.

147—Agricultural Gazette of New South Wales.

- a. GORDON, H. McL., 1950.—“The wet season and worms in sheep.” 61 (9), 445-447.

(147a) The continued wet weather and the flooding of wide areas in New South Wales during recent months have produced conditions most favourable to the development of helminths, especially of sheep which already carry a considerable worm burden in normal seasons. Severe infections have been reported from Yass, Young, Dubbo, Warren, Wee Waa, Rowena and even from Bourke. Since the early autumn *Ostertagia* and *Trichostrongylus* have been the chief causes of these outbreaks. Owing to the unusually favourable conditions for the multiplication of *Limnaea brazieri*, *Fasciola hepatica* is widespread on many properties where it was previously extremely rare. It is advisable that ewes should be drenched about one month before lambing or at marking time, and the lambs drenched before weaning. Phenothiazine is recommended but is in short supply. If pastures are heavily contaminated, they should be rested for about three weeks. Nutrition should be improved in quantity, quality and suitability. Strategic drenching of breeding flocks should be carried out during the next twelve months whether or not the weather reverts to normal. Tactical drenching is advisable about three weeks after a good fall of rain extending over several cloudy days, and whenever the food deteriorates.

R.T.L.

148—American Heart Journal.

- a. KENAWY, M. R., 1950.—“The syndrome of cardiopulmonary schistosomiasis (cor pulmonale).” 39 (5), 678-696.

(148a) Cardiopulmonary schistosomiasis is on the increase in Egypt and is a not uncommon cause of right-sided heart failure. Most of the Egyptian cases are secondary to intestinal schistosomiasis mansoni. The clinical, radiological and electrocardiographic findings in seven cases are now reported. The X-ray appearance is that of “mitral configuration”. The responsible lesion is obliterative arteriolitis. Healing results in obstruction, eventually followed by dilatation and atheroma of the pulmonary artery and by hypertrophy of the right ventricle. Haemoptysis occurred in two of the patients. R.T.L.

149—American Journal of Diseases of Children.

- a. MERCER, R. D., LUND, H. Z., BLOOMFIELD, R. A. & CALDWELL, F. E., 1950.—“Larval ascariasis as a cause of chronic eosinophilia with visceral manifestations.” 80 (1), 46–58.

(149a) Allergy to *Ascaris lumbricoides* is considered to be the explanation of the syndrome of chronic eosinophilia, eosinophilic granulations of the liver containing *Ascaris* larvae, and pulmonary infiltrations as seen by X-ray, which were present in a child 2 years of age. The larvae found by a biopsy of the liver were probably trapped by the extensive hyperergic tissue response.

R.T.L.

150—American Journal of Tropical Medicine.

- a. HOEKENGA, M. T., 1950.—“The incidence of human intestinal parasites in northwestern Honduras.” 30 (5), 757–759.
 b. McQUOWN, A. L., 1950.—“*Capillaria hepatica*: report of genuine and spurious cases.” 30 (5), 761–767.
 c. SEIFE, M. & LISA, J. R., 1950.—“Diabetes mellitus and pylephlebotic abscess of the liver resulting from *Schistosoma mansoni* infestation.” 30 (5), 769–772.

(150a) Single stool examinations of 5,000 persons in northwestern Honduras revealed the following infections: *Ascaris lumbricoides* 22.5%, *Trichuris trichiura* 50.7%, *Necator americanus* 34.4%, *Strongyloides stercoralis* 5.7%, *Enterobius vermicularis* 0.4%, *Taenia saginata* 0.4%, *T. solium* 0.1%, *Hymenolepis nana* 0.4%. A table sets out for comparison the results previously reported for Honduras.

R.T.L.

(150b) A second actual case of human infection with *Capillaria hepatica* is reported with necropsy findings and is illustrated. A spurious case is also reported.

R.T.L.

151—American Journal of Veterinary Research.

- a. SCHWABE, C. W., 1950.—“Studies on *Oxyspirura mansoni*, the tropical eyeworm of poultry. III. Preliminary observations on eyeworm pathogenicity.” 11 (40), 286–290.

(151a) *Oxyspirura mansoni* is today widespread among domestic fowls in all the major islands of Hawaii. Wild birds, mostly sparrows, doves and mynahs are also infected, but are not considered to be an important factor in introducing the infection to clean flocks. The worms were often noted in the eyes five minutes after feeding chickens with infected cockroaches. The larvae travel from the crop up the oesophagus into the mouth and reach the eyes through the palatine cleft, according to Fielding. In the present experiments the infective larvae introduced into the eye with a fine pipette caused temporary discomfort and some histopathological changes, but severe symptoms and blindness were not produced. Although 1,000 larvae were used the number of worms recovered did not exceed 200. The advanced changes so often noticed in heavily infected flocks are possibly due to secondary viral or bacterial invaders.

R.T.L.

152—Anales del Instituto de Biología. Mexico.

- a. CABALLERO y C., E., 1950.—“Un nuevo género de tremátodo de peces marinos perteneciente a la familia Acanthocolpidae Lühe, 1909.” 21 (1), 95–102.
 b. BRAVO HOLLIS, M., 1950.—“Estudio de nemátodos parásitos de los lepóridos del Distrito Federal.” 21 (1), 103–118.
 c. ZERECERO y D., M. C., 1950.—“Sobre la presencia de un tremátodo del género *Mesocoelium* Odhner, 1911, en reptiles de Cuicatlán, Oax.” 21 (1), 119–126.

(152a) *Dihemistephanus brachyderus* Manter, 1940, from the intestine of marine fishes, is made the type of *Manteria* n.g. The new genus is differentiated from *Dihemistephanus* by the disposition of the circumoral spines, the arrangement and structure of the cuticular spines, the position of the ventral sucker and pharynx, the shape and size of the cirrus pouch and of the metraterm, the distribution of the yolk glands and the structure of the excretory system.

R.T.L.

(152b) Bravo Hollis gives succinct descriptions of the males and females of *Passalurus nonanulatus* and *Dermatoxys veligera* from *Romerolagus diazi* and *Sylvilagus floridanus*, *Trichostrongylus calcaratus*, *Longistriata dubia* and *Trichuris leporis* from *R. diazi*, and *Obeliscoides cuniculi* from *S. floridanus*. She describes *Dermatoxys romerolagi* n.sp. from *R. diazi*, differentiating it from *D. getula* and *D. veligera*.
R.T.L.

(152c) *Mesocoelium leiperi* is reported from *Eumeces* sp. collected at Rio Grande, Cuicatlán, Oax., and is redescribed.
R.T.L.

153—Annales du Musée du Congo Belge. C.—Zoologie.

- a. DOLLFUS, R. P., 1950.—"Trématodes récoltés au Congo Belge par le Professeur Paul Brien (mai-août 1937)." *Série V*, 1 (1), 135 pp.

(153a) Dollfus describes 44 trematode species collected by Brien in the Belgian Congo. This material contains three new genera and 16 new species. *Brientrema* n.g. is represented by two species, *B. pelecani* n.sp. from *Pelecanus rufescens*, and *B. malapteruri* n.sp. from *Malapterurus electricus* and *Distichodus lusosso*, and is placed in a new subfamily Brientrematinae n.subf., related to the Acanthochasmodae and characterized by the forward position of the uterus and the presence of a circumoral ring of spines. The creation of a new family Trematobrienidae n.fam. is necessary to accommodate the genus and species *Trematobrien haplochromis* n.g., n.sp. from *Haplochromis moffati*. It is related to the Allocreadioidea, particularly to *Pseudocreadium* from which it differs however in the general disposition of the genitalia. The new genus *Clinostomoides*, incorporating a single species *C. brienii* n.g., n.sp. from *Ardea goliath*, can be most easily recognized by the position of the genital pore and the form of the cirrus-sac. A new family Derogenidae n.fam. (Hemiuroidea) is created for the Derogeninae, Halipeginae, Bunocotylinae and Liocercinae. The other new species are *Acanthochasmus gonotyl* n.sp. from *Crocodilus niloticus*, *A. gymnarchi* n.sp. from *Gymnarchus niloticus*, *Halipegus africanus* n.sp. from *Rana mascareniensis*, *Opisthioglyphe pelusios* n.sp. from *Pelusios nigricans*, *Emoleptalea synodontidos* n.sp. from *Synodontis notatus ocellatus*, *Cephalogonimus thomasi* n.sp. and *Auridistomum thomasi* n.sp. from *Pelusios nigricans*, *Glypthelminis africana* n.sp. from *Rana mascareniensis*, *Mesocoelium schwetzi* n.sp. from *Bufo regularis* and *Rana mascareniensis*, *Echinostoma stenon* n.sp. from *Anastomus lamelligerus*, *Ribeiroia congolensis* n.sp. from *Ardea goliath*, and *Uvulifer cerylon* n.sp. from *Ceryle rudis*. Several forms, possibly new, are described but not named specifically. A number of larval forms from various gastropods are also described, some of which also appear to be new.
P.A.C.

154—Annales de la Société Belge de Médecine Tropicale.

- a. BECKER, C. K., 1950.—"Filaires adultes (*Onchocerca volvulus*) libres dans les tissus." 30 (1), 9-10. [Flemish summary p. 10.]
b. PEEL, E. & OYE, E. VAN, 1950.—"Recherche sur la transmission transplacentaire des micro-filaires." 30 (1), 59-64. [Flemish summary pp. 63-64.]
c. VANBREUSEGHEM, R., 1950.—"Difficultés du diagnostic de la filariose à *Loa-loa* et son traitement par la diéthylcarbamazine." 30 (1), 71-77. [Flemish summary pp. 76-77.]
d. WANSON, M., BORGERS, G. & PANNIER, L., 1950.—"Activité de l'hétrazan sur *Dipetalonema streptocerca*." 30 (1), 91-95. [Flemish summary p. 94.]
e. GILLET, J., 1950.—"Contribution à l'étude de la bilharziose urinaire au Congo Belge (2me partie)." 30 (2), 195-204. [Flemish summary p. 202.]
f. VALCKE, G., 1950.—"Bilharziose intestinale." 30 (2), 329-330. [Flemish summary p. 330.]

(154a) In two cases operated upon for inguinal hernia, and in one for Caesarean section, an adult female *Onchocerca volvulus* was found free in the tissues. The worms, which measured 350-400 mm. in length, were easily extracted. There was no inflammatory reaction.
R.T.L.

(154b) At the maternity ward of the Native Hospital, Leopoldville, Peel & van Oye failed to find any evidence of prenatal infection with microfilariae in 107 babies born of

104 women with various filarial infections, although examination of the placenta revealed *Mf. loa* in 14 out of 19, *Mf. perstans* in 18 out of 59 and *Mf. bancrofti* in 3 out of 4. No microfilariae were present in the placenta of 20 women who had *Onchocerca volvulus* or of four women with *Mf. streptocerca*. R.T.L.

(154c) That Calabar swellings and filarial prurigo respond very favourably to treatment with diethylcarbamazine [=hetrazan] is shown by clinical reports of 14 cases which received 2 mg. per kg. body-weight three times daily for 21 days. In nearly all the cases a violent pruritus with papular eruptions followed within one or two hours, which was considerably alleviated by the concurrent administration of a synthetic antihistamine. R.T.L.

(154d) *Dipetalonema streptocerca*, which is very prevalent in Penzele, Bempaka and other regions near Coquilhatville, is exceedingly sensitive to hetrazan. The microfilariae disappeared from the skin within 48 hours after doses of 0.8 mg. per kg. body-weight were given three times daily for six days, without any anaphylactic reactions, in 12 children 6-8 years old. In six children of school age, 1.25 mg. given thrice daily for six days was also efficacious. Eighteen adults of 42-72 kg. body-weight received three times daily 0.8 mg. per kg. for five days and 1.25 mg. for five days; the *D. streptocerca* embryos had been destroyed on the first or second day. In a final series of six adults the dosage given was 6 mg. per kg. daily for eight days, which gave excellent results. It is noted that hetrazan had no effect on *Mf. perstans*. R.T.L.

(154e) Gillet describes in detail the morphology of the adults and the eggs of specimens of *Schistosoma haematobium* and *S. bovis* collected in the Island of Mateba. He considers that the cost and time involved would render prophylactic measures based on mollusc destruction very difficult. The only practical course lies in treatment and education of the inhabitants. R.T.L.

(154f) As illustrations of the low efficacy of foudadin against *Schistosoma mansoni* two cases are cited, a married couple, where the stools were positive after three years during which the husband had received 75 injections and the wife 72 injections. Valcke prefers tartar emetic. Vomiting, which frequently accompanies its injection, was controlled in three cases by a preceding intravenous injection of 5-10 c.c. of 1% novocaine. R.T.L.

155—Annals of Tropical Medicine and Parasitology.

- a. HUGHES, T. E., 1950.—"Some stages of *Litomosoides carinii* in *Liponyssus bacoti*." 44 (3), 285-290.

(155a) Hughes has studied the development of *Litomosoides carinii* to the infective stage in the mite, *Liponyssus bacoti*, during the 14 days after feeding on an infected cotton-rat. Seven days after infection the larvae are in the visceral parenchyma, between the caeca and body wall, and have apparently undergone an ecdysis and become second-stage larvae. The infective larvae are found on the 13th or 14th day in the same position, or in some cases tight against the cuticle in the epidermis. Those embryos which linger in the lumen of the gut are ingested by free cells; this phagocytosis is not a normal activity of these cells, for in uninfected mites they are concerned in the formation of ball-like clumps of non-crystalline black granules which are later found in faeces. R.T.L.

156—Antiseptic. Madras.

- a. FRIEDMANN, M., 1950.—" *Ascaris lumbricoides*." 47 (4), 262-274.

(156a) The Shevaroy Hills are so heavily infested with *Ascaris* that cases are seen almost daily in medical practice at Yercaud (Salem district). Reports are given of cases of ascariasis imitating appendicitis, abdominal tumour, nutritional oedema, nervous disorder, poisoning, Jackson's epilepsy, pneumonia complications and ulcer ventriculi. The symptoms, treatment and prevention are discussed. R.T.L.

157—Archives Internationales de Neurologie.

- a. DURAND, 1950.—"La rénovation d'une médication désuète: les sangsues." 69 (2), 17-27; (3), 41-47.

158—Archivio Italiano di Scienze Mediche Tropicali e di Parassitologia.

- a. LIPPI, M., 1950.—"Studio del mielogramma nell'echinococcosi." 31 (1), 31-45. [English, French & German summaries pp. 44-45.]
 b. GAMBINI, G., 1950.—"Su un caso di 'larva migrans' e sui benefici risultati ottenuti con antimonio di N/metilglucamina." 31 (1), 57-65. [English, French & German summaries p. 64.]

(158a) Thirty-six patients with hydatid infections all showed increases in the eosinophil count. There was also a slight increase in erythrocytes although the number of leucocytes remained unchanged. Both white and red immature elements in the myelogram were lessened but the more mature elements were increased. R.T.L.

(158b) Gambini describes and illustrates a case of "larva migrans" acquired by an Italian aviator during a visit to Brazil. Very good results followed the local injection of N-methylglucamine antimoniate. R.T.L.

159—Archivos Uruguayos de Medicina, Cirugía y Especialidades.

- a. PEDEMONTE, P. V. & SARROCA, J. A., 1950.—"Equinococosis articular de ambas rodillas. Secundaria a derecha y primitiva a izquierda." 36 (1), 87-99. [Discussion pp. 99-100.]
 b. LARGHERO YBARZ, P., 1950.—"Equinococosis del músculo psoas—(psitis hidática)." 36 (1), 104-109.
 c. CAGNOLI, H., 1950.—"El signo de Bado en el diagnóstico radiográfico de la equinococosis ósea." 36 (1), 119-121.

160—Australian Journal of Agricultural Research.

- a. STEWART, D. F., 1950.—"Studies on resistance of sheep to infestation with *Haemonchus contortus* and *Trichostrongylus* spp. and on the immunological reactions of sheep exposed to infestation. I. The preparation of antigens for the complement fixation test and the reactivity of the biochemical fractions of *H. contortus*." 1 (3), 285-300.
 b. STEWART, D. F., 1950.—"Studies on resistance of sheep to infestation with *Haemonchus contortus* and *Trichostrongylus* spp. and on the immunological reactions of sheep exposed to infestation. II. The antibody response to infestation with *H. contortus*." 1 (3), 301-321.

(160a) The most satisfactory method of preparing antigens for the detection, by the complement fixation technique, of circulating antibodies in sheep infected with *Haemonchus contortus* and *Trichostrongylus* spp. was by extracting worm material in glass-distilled water at 100°C. for 10 minutes. No preservative was added. The boiled antigen retained its quality for two or three weeks when stored in a refrigerator. Young adults, infective larvae and ova of *H. contortus* gave potent antigens but old mature adults yielded antigens of low potency. Adults and infective larvae of *Trichostrongylus* spp. consistently yielded antigens of high potency. *H. contortus* and *Trichostrongylus* spp. absorbed the antiserum to each other. A lipid was an essential constituent. The lipid and the carbohydrate fraction were not antigenic when injected into rabbits. A variety of nematodes gave a lipid fraction which reacted with antisera to *H. contortus* infection but similar fractions of two trematodes failed. Normal saline suspensions of the lipid-free material from various helminths showed a greater specificity with artificially prepared antisera than did the lipid fractions. R.T.L.

(160b) Sheep born and reared in a worm-free environment were kept in pens and used for study of the serological reactions to infection with *Haemonchus contortus*. Antibody response was stimulated by the administration of third-stage infective larvae. As the infection developed the response declined. Sheep harbouring adult *H. contortus* did not produce antibodies. The sera of sheep dying from infection were negative to the complement fixation test. Ground-up adults of *H. contortus* did not elicit antibody response

when given by the mouth or when injected into the rumen nor did heat-killed infective larvae when given by the mouth, but there was a transient rise in titre when the larvae were injected into the rumen. Existing infections with *H. contortus* or *Trichostrongylus* spp. were eliminated or the egg output suppressed when a superimposed dose of live infective larvae of *H. contortus* was given by the mouth. There was also a rise in serum titre but no resistance to the development of the larvae. The injection of heat-killed larvae into the rumen did not have the same effect. Vaccines made from ground-up infective larvae failed to protect sheep from infection with *H. contortus* or *Trichostrongylus* spp. but intravenous injections of formalinized ground-up larvae, by stimulating antibody formation, appeared to influence the course of existing infections with *H. contortus*. R.T.L.

161—Australian Journal of Scientific Research. Series B, Biological Sciences.

- a. LAZARUS, M., 1950.—“The respiratory metabolism of helminths.” 3 (2), 245-250.
- b. MASSEY, V. & ROGERS, W. P., 1950.—“The intermediary metabolism of nematode parasites. I. The general reactions of the tricarboxylic acid cycle.” 3 (2), 251-264.

(161a) Lazarus found that *Haemonchus contortus*, *Ostertagia circumcincta*, *Syphacia* sp., *Heterakis spumosa*, *Strongylus equinus* and *S. vulgaris* gave Q_{O_2} values ranging from -7.4 to -1.1. The R.Q. values ranged from 0.8 to 3.3. Cyanide inhibited the uptake of oxygen. *Paramphistomum cervi* gave Q_{O_2} of -0.03, and R.Q. of 8, and cyanide caused a pronounced increase in its oxygen uptake; this increase did not occur when methylene blue was present. W.P.R.

(161b) Massey & Rogers found that the oxygen consumption of *brei* or mince prepared from *Nematodirus filicollis*, *N. spathiger*, *Ascaridia galli* and *Neoaplectana glaseri* was stimulated by the addition of pyruvate, L-ketoglutarate, succinate, fumarate, malate and oxaloacetate. Citrate did not stimulate respiration. Malonate, arsenate, arsenite, pyrophosphate, and azide inhibited respiration. When *brei* from *Nematodirus* spp. and *Ascaridia galli* were fortified with adenosinetriphosphate, diphosphopyridine nucleotide and triphosphopyridine nucleotide, the inhibition due to malonate was decreased by adding intermediates of the tricarboxylic acid cycle, and the accumulation of succinate in the malonate-poisoned *brei* was increased when fumarate, fumarate plus pyruvate, or citrate was added. On the basis of these results, the authors suggest that some form of the tricarboxylic acid cycle functions in the tissues of the parasites. W.P.R.

162—Australian Veterinary Journal.

- a. JONATHAN, S. R., 1950.—“The life history of the rumen flukes of cattle in New Zealand.” 26 (7), 149-151.

(162a) Jonathan has succeeded, by laboratory experiments, in incriminating *Planorbis kahuika* as a vector of the [unidentified] amphistome prevalent in cattle in New Zealand. Of 425 cattle drawn from the Province of Wellington and slaughtered at Petone 45.6% were infected. On a farm near Featherston, where a number of the heavily infected animals had been reared, 6% of 477 *P. kahuika* were found to be naturally infected with amphistome and 1.3% with echinostome parthenitae. *Potamopyrgus* sp. contained cercariae of *Coitocaeum anaspidis*, *Opechana* spp. and of an unidentified monostome cercaria and furcocercaria. R.T.L.

163—British Farmer.

- a. PETERS, B. G., 1950.—“Controlling potato root eelworm.” Year 1950, No. 28, p. 11.

(163a) Peters gives a popular account of the potato root eelworm [*Heterodera rostochiensis*] and its control. He stresses the bad effects of leaving not only chats but also 16 cwt. per acre of ware (on the average) in the ground at harvest, thus ensuring a large population of groundkeepers in the next crop, on which the eelworm can flourish. B.G.P.

164—British Medical Journal.

- a. DAWOOD, M., 1950.—"Some aspects of *Schistosoma mansoni* infection." Year 1950, 2 (4680), 658.
- b. CAMERON, A., 1950.—"Haematemeses from leeches." [Correspondence.] Year 1950, 2 (4680), 679-680.
- c. ANON., 1950.—"Hetrazan and filariasis." [Annotation.] Year 1950, 2 (4682), 772.
- d. WEST, H. F., 1950.—"Haematemeses from leeches." [Correspondence.] Year 1950, 2 (4682), 784-785.
- e. CUNNINGHAM, A. T., 1950.—"Haematemeses from leeches." [Correspondence.] Year 1950, 2 (4684), 891.
- f. WELLS, A. V., 1950.—"Hookworms in the throat." [Correspondence.] Year 1950, 2 (4689), 1173.

(164a) Three case reports of *Schistosoma mansoni* infection show that in some respects the pathology of *S. mansoni* may resemble that of *S. japonicum*. In one case there were extensive milary lesions of the small intestine, macroscopically indistinguishable from milary tubercles, and a heavy infection of the mesenteric and retroperitoneal lymph nodes. In the second case there was a heavy adult infection of the portal system with lymph-node enlargement. In the third case infection of the lymph nodes was a predominant feature and there were few intestinal lesions. The essential difference in *S. japonicum* is the location of adults and the discharge of eggs in the vessels draining the small intestine. R.T.L.

(164b) Cameron records three cases of haematemeses caused by leeches, one in an Arab boy refugee at a camp in the Jordan Valley and two cases seen in Transjordan. The Arab boy had vomited blood three times during the preceding two days, and vomited fresh blood with mucus, food residue and typical "coffee grounds" shortly after arrival. A small black object was seen behind the uvula firmly attached to the posterior wall of the nasopharynx. After spraying with 5% cocaine hydrochloride, a leech (*Limnatis nilotica*) was easily removed by forceps. Cameron cites an interesting parallel from an anecdote about the Arabian physician Rhazes (A.D.850 to 923) quoted by Browne in his FitzPatrick Lectures on Arabian medicine. R.T.L.

(164d) Leeches may cause haemoptysis. West, at the C.M.S. Hospital at Es Salt [in the Jordan valley], has removed a number of leeches from the throats of villagers and shepherds. Leeches may attach themselves to the pharynx when water is drunk from the spouts of stone water-jars or directly from the edge of a stream. A case is mentioned in which a leech attached to the underside of a vocal cord caused the almost continuous coughing of blood for three days. R.T.L.

(164e) Cunningham, at a military hospital at El Kantara [Egypt], saw an instance of haematemeses similar to that reported by Cameron [see above abstract No. 164b]. There was bleeding from the nasopharynx. Examination of a blood clot revealed that it was an enormously engorged leech. R.T.L.

(164f) A small red wriggling worm which appeared to have two heads was removed from the posterior pharyngeal wall of a St. Lucia patient who had a history of burning pain in the throat and a persistent cough of two weeks' duration. The worms were diagnosed provisionally as *Necator americanus* [? *Syngamus*]. R.T.L.

165—Bulletin. Kentucky Agricultural Experiment Station.

- a. TODD, A. C., HANSEN, M. F., WYANT, Z. N., KELLEY, G. W. & CROWDUS, D. H., 1950.—"Continuous low-level versus periodic phenothiazine therapy for Thoroughbred yearlings." No. 545, 8 pp.
- b. TODD, A. C., HANSEN, M. F., KELLEY, G. W., WYANT, Z. N. & HULL, F. E., 1950.—"Worm parasites in Thoroughbred yearlings. A survey of incidence, development, and control." No. 546, 15 pp.
- c. TODD, A. C., HANSEN, M. F., WYANT, Z. N., KELLEY, G. W. & CROWDUS, D. H., 1950.—"Phenothiazine therapy and fertility of strongyle eggs passed by horses." No. 551, 11 pp.

(165a) Low-level phenothiazine treatment of a yearling colt, consisting of 2 gm. daily for 10 months, is compared with two therapeutic phenothiazine treatments, of

9.5-15.7 gm. and 21 gm. respectively, in four colts during the same period. Strongyle egg output was very much higher in the colts receiving therapeutic treatment than in the colt receiving small daily doses. No adverse effects were noted in either method of control.

J.W.G.L.

(165b) Weekly faecal examination of Thoroughbred yearlings on eight farms showed that control of worm infections was only accomplished by the efficient use of anthelmintics. No methods of animal management or hygienic practice were alone sufficient. The season and the method of administration were as important as the amount of anthelmintic used in treatment.

J.W.G.L.

(165c) Continuous low-level phenothiazine treatment of mares and foals resulted in a marked reduction in strongyle egg output and a significant reduction in the fertility of the eggs. Two gm. of phenothiazine daily was found to be most efficient. It is pointed out that while this method of control has much to recommend it, its general use cannot be advocated until further work has assessed the effect of such treatment on the health of the horses.

J.W.G.L.

166—Bulletin de la Société de Pathologie Exotique.

- a. PICK, F., 1950.—"Inclusion des oeufs d'*Ascaris megalcephala* à l'aide de la technique de silico-gel sur lame." 43 (7/8), 428-431.
- b. PICK, F., 1950.—"Le mode de fixation du trématode *Watsonius watsoni* sur la paroi intestinale." 43 (7/8), 431-435.
- c. MAUZE, J. & LANGUILLON, J., 1950.—"Essais de destruction de *Planorbis guadelupensis*." 43 (7/8), 435-437.
- d. FAIN, A., 1950.—"*Inermicapsifer cubensis* (Kouri, 1938). Présence du cestode *I. cubensis* synonyme de *Inermicapsifer arvicanthidis* (Kofend, 1917) chez un enfant indigène et chez un rat (*Rattus R. rattus* L.) au Ruanda-Urundi (Congo belge)." 43 (7/8), 438-443.
- e. PUYUELO, R., 1950.—"Le traitement de l'onchocercose en Haute-Volta. Premiers essais chimiothérapiques par la 1-diéthyl-carbamyl 4-méthylpipérazine." 43 (7/8), 462-470.
- f. CANET, J. & JAHAN, P., 1950.—"Essais de traitement de la filarose canine en Indochine par le 1-diéthyl carbamyl 4-méthylpipérazine." 43 (7/8), 470-482.
- g. JOYEUX, C., BAER, J. G. & GAUD, J., 1950.—"Recherches sur des cestodes d'Indochine et sur quelques *Diphyllbothrium* (bothriocéphales)." 43 (7/8), 482-489.
- h. DELAHOUSSE, COURDURIER & RAZAFINDRAZAKA, 1950.—"A propos d'une observation de polyparasitisme intestinal compliqué d'hémiplégie et d'anémie." 43 (7/8), 497-498.
- i. JOURNE, PIGANOL & RAJAOBELISON, 1950.—"Ascariodose intra-hépatique." 43 (7/8), 501.

(166a) When *Parascaris equorum* ova, previously sterilized, are incorporated in a square of silico-gel on a microscope slide and the coverslip sealed with paraffin wax, their development is arrested. But they rapidly become embryonated, even after several months, if they are then transferred to a silico-gel surface in a petri dish at 33°C.

R.T.L.

(166b) Specimens of *Watsonius watsoni* taken from *Papio sphinx* show active changes in shape when studied *in vitro* at 37°C. in Ringer-serum adjusted to pH 7. Adhesion by the ventral sucker is evidently assisted by undulating movements of other parts of the body.

R.T.L.

(166c) Laboratory tests of Fisher's technique for the destruction of *Planorbis guadeloupensis* failed to support his observation that the action of copper sulphate is increased by the addition of tartaric acid. Experiments with ferrous sulphate showed that 1:100,000 is a good molluscicide. In this case the addition of tartaric acid appeared to increase its efficacy.

R.T.L.

(166d) From a comparison of specimens of *Inermicapsifer arvicanthidis*, collected from a child aged six and from a rat at Astrida in Ruanda-Urundi, with paratypes of *I. cubensis* and specimens of *I. arvicanthidis* from different parts of Africa, Fain is convinced that *I. cubensis* is a synonym.

R.T.L.

(166e) The piperazine Notézine [hetrazan] kills the embryos of *Onchocerca volvulus* in the skin within four to six days. Its action on the adult worms is less rapid and generally takes 30 to 45 days. It relieves ocular symptoms, often in a spectacular manner, in 90% of cases. During the first five days it induces, in 100% of cases, allergic reactions which are sometimes severe. The injection of anti-allergics for two or three days before treatment begins sometimes ameliorates these allergic reactions. Notézine given by the mouth and injected into the nodules results in rapid and complete sterilization. The greatest benefit follows if medical treatment is followed by excision. R.T.L.

(166f) Of three dogs harbouring unidentified microfilariae treated with Notézine [hetrazan], one showed a transient disappearance, the others a transient diminution of the microfilariae. In two of the dogs there was an amelioration of a pruritus attributed to the filarial infection. During the following months the embryos became as abundant in the blood as formerly. R.T.L.

(166g) Five cestodes are recorded from Cholon, Indo-China, and their systematic relationships discussed. They are: *Cotugnia taiwanensis* and *Raillietina* (*R.*) *paucitesticulata* from the domestic pigeon; *R. (Paroniella) compacta* from *Corvus macrorhynchus*; *Dilepis undula* and *Hymenolepis farciminosa* from *Acridotheres tristis*. *Sparganum erinacei-europaei* var. *mansoni* was found in the abdominal cavity of *Natrix subminiata*. The occurrence of *Sparganum* encysted under the skin in *Acridotheres tristis* and in a domestic hen at Tamatave in Madagascar is also recorded. Spargana are known to occur in a number of vertebrates in Madagascar. They all have the same morphological characters but whether they are derived from one or several adult *Diphyllbothrium* spp. is still unsettled. The *Diphyllbothrium* of Madagascar is considered to be *D. erinacei-europaei*. To this species Bavay's (1890) tentative diagnosis of *D. latum* from a dog at Diego-Suarez is referred. R.T.L.

167—Bulletin de la Société des Sciences et des Lettres de Łódź. Classe III de Sciences Mathématiques et Naturelles.

- a. PAWŁOWSKI, L. K., 1950.—"Cas particulier d'anomalie dans la structure du corps de la sangsue *Erpobdella octoculata* (L.)." 3 (1), 1-3.

168—Bulletin of the World Health Organization.

- a. WRIGHT, W. H., 1950.—"Bilharziasis as a public-health problem in the Pacific." 2 (4), 581-595.

(168a) As schistosomiasis japonica is not a spectacular disease, owing to its insidious onset and chronic course, its public health significance is largely overlooked. But in China nearly 33 million people are probably infected, in Japan 174,000 and in the Philippines nearly 250,000. The ecology of the four species of *Oncomelania* so far implicated in its transmission is summarized, and the difficulties of control are discussed. The most pressing need is for a cheap, safe and effective molluscicide. R.T.L.

169—Bulletin of Zoological Nomenclature.

- a. INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE, 1950.—"Necator" Stiles, 1903 (Class Nematoda), an invalid name inadvertently placed on the 'Official List of Generic Names in Zoology' in 'Opinion' 66: validation of, under the plenary powers." 4 (10/12), 300-301.
- b. INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE, 1950.—"Bilharzia" Meckel von Hemsbach, 1856, suppressed, and 'Schistosoma' Weinland, 1858 (Class Trematoda), validated, under the plenary powers." 4 (10/12), 319-323.
- c. INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE, 1950.—"Linnean system of binominal nomenclature not available for the nomenclature of monsters: generic and trivial names published for such purposes to have no status in zoological nomenclature." 4 (13/15), 363-364.

- d. INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE, 1950.—
" *Fasciola ovata* Rudolphi, 1803 (Class Trematoda, Order Digenea), a composite nominal species : action by Braun in determining taxonomic identity of, correct under Article 31." 4 (13/15), 386-387.
- e. INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE, 1950.—
" Article 5 (position when the type genus of a . . . family is united with another genus and the combined genus is treated as belonging to the same family as a third genus, having an older name than either of the other genera) problem to be dealt with in Report to be prepared by Secretary." 4 (13/15), 401-402.
- f. INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE, 1950.—
" '*Taenia*' Linnaeus, 1758 (Class Cestoidea) ; use of the plenary powers (1) to designate '*Taenia solium*' Linnaeus, 1758, as the type species of, and (2) to validate an erroneous entry relating to, in the 'Official List of Generic Names in Zoology' (correction of an error in 'Opinion' 84)." 4 (19/21), 584-586.
- g. INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE, 1950.—
" Meaning of the expression 'nomenclature binaire' as used in the 'Règles'." 5 (1/3), 23-26.
- h. INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE, 1950.—
" *Necator* Stiles, 1903 (Class Nematoda) : validation of erroneous entry in the 'Official List of Generic Names in Zoology'." 5 (4/6), 93.

(169a) The International Commission on Zoological Nomenclature has used its plenary powers to confirm the entry of *Necator* Stiles, 1903 in the "Official List of Generic Names in Zoology" and to suppress the generic name *Necator* Sclater and Saunders, 1896, an emendation of *Nicator* given to a genus of birds by Finsch and Hartlaub, 1870. R.T.L.

(169b) The International Commission on Zoological Nomenclature has used its plenary powers to suppress the name *Bilharzia* Meckel von Hemsbach, 1856 and to validate the name *Schistosoma* Weinland, 1858. R.T.L.

(169c) The International Commission on Zoological Nomenclature has agreed to recommend that Latin names, e.g. *Schistosomus* Gurlt, 1832 and *Schistosoma reflexum* Eisenbarth, 1908 given to mammalian monsters possess no status in zoological nomenclature. R.T.L.

(169d) The International Commission on Zoological Nomenclature has agreed (i) that Braun (1901) acted correctly when on ascertaining by reference to Rudolphi's original material that *Fasciola ovata* Rudolphi, 1803, was a composite species containing two taxonomically distinct species he had selected one to be the species to which the name *Fasciola ovata* Rudolphi, 1803 should adhere and (ii) that the trivial name *ovata* Rudolphi, 1803 in the binominal combination *Fasciola ovata* as determined by Braun, 1901 should be placed on the "Official List of Specific Trivial Names in Zoology". R.T.L.

(169e) The International Commission on Zoological Nomenclature deferred a decision on the questions : (i) should Goto (1919) have changed the family name from Dissotrematidae to Gyliachenidae on sinking the genus *Dissotrema* as a synonym of *Gyliachen*, (ii) was Fukui (1928) correct in changing this family name to Opistholebetidae ? R.T.L.

(169f) The International Commission on Zoological Nomenclature agreed to use its plenary powers to set aside the indication of *Taenia vulgaris* Linnaeus, 1758 as the type of *Taenia* by absolute tautonymy, to designate *Taenia solium* Linnaeus, 1758 to be the type of the genus, to place the trivial name *solium* on the "Official List of Specific Trivial Names in Zoology" and to render an Opinion supplementary to Opinion 84 drawing attention to the error contained therein as respects the generic name *Taenia*. R.T.L.

(169g) The Commission recommended to the International Congress of Zoology (Paris, 1948) that in Articles 25 and 26 of the International Rules of Zoological Nomenclature the expression "nomenclature binominale" should be substituted for the expression "nomenclature binaire" and that its plenary powers should be used "to protect certain generic names in common use which had been published subsequent to 1757 by authors

who, while accepting the proposition that the name of a species should convey two concepts, that of the genus and that of the species, did not give effect to that proposition by using the Linnean system of binominal nomenclature".

R.T.L.

(169h) *Necator* Stiles, 1903 was erroneously entered in the Official List of Generic Names in Zoology. It is a homonym of *Necator* Sclater & Saunders, 1896, an emendation of *Nicator* Finsch & Hartlaub, 1870 (Aves). The Section on Nomenclature of the International Congress of Zoology, Paris 1948 approved of the report that the International Commission on Zoological Nomenclature had decided to exercise its plenary powers to validate the entry by suppressing *Necator* Sclater & Saunders, 1896, a name which is not in use by ornithologists (see No. 169a above).

R.T.L.

170—Cahiers Médicaux de l'Union Française. Algiers.

- a. TOULANT, P., ROBINEAU, G. & PUYELO, R., 1950.—"L'atrophie du nerf optique dans l'onchocercose africaine." 5 (35), 9-11.
- b. TOULANT, M., 1950.—"Le problème de l'onchocercose oculaire." 5 (36), 13-14.

171—Calcutta Medical Journal.

- a. SANYAL, P., 1950.—"Elephantiasis scrotum (filariasis)." 47 (1), 10-11.

172—California Agriculture.

- a. ALLEN, M. W. & RASKI, D. J., 1950.—"Chemical control of nematodes. Soil type important limiting factor in control of certain plant parasitic nematodes with volatile soil fumigants." 4 (10), 5, 15.

(172a) Allen & Raski find that larvae of the root knot eelworm [*Heterodera marioni*] and eggs in cysts of the sugar beet eelworm [*H. schachtii*] are about equally susceptible to D-D mixture, while ethylene dibromide under conditions lethal to the former is ineffective against the latter. The fact that, in field tests at 25 gal. per acre against sugar beet eelworm, D-D has given far better results in Utah and Idaho than in California, is probably due to differences in soil type. In an experimental comparison of sandy, silty, clayey loams and peat, treated with D-D at about 75% of moisture equivalent, and using the buried bag technique, treatment was about 100 times as effective in the sands as in the clay or peat, against both root-knot and sugar beet eelworm. This is shown to be due to poor diffusion, vertically and laterally, in the latter soils.

B.G.P.

173—California Citrograph.

- a. BAINES, R. C., 1950.—"Citrus-root nematode investigations." 35 (8), 344-345.

(173a) Baines presents some observations on the citrus-root nematode, *Tylenchulus semi-penetrans*. He shows that in the case of experimental inoculations a young sour-orange seedling was 12% shorter than an uninoculated one. In general, the process of building up an infestation to an injurious level is a slow one. The optimum temperature for the growth of the parasite is between 77°F. and 88°F. Particulars are given on the host range of the parasite and mention is made also of tests of certain modern fumigants applied in irrigation water. The time is not yet ripe for the recommendation of any fumigant for controlling nematodes on the roots of living citrus trees.

T.G.

174—Canadian Journal of Comparative Medicine.

- a. SWALES, W. E., 1950.—"Enterohepatitis (blackhead) in turkeys. VII.—Experiments on transmission of the disease." 14 (9), 298-303. [French summary p. 302.]
- b. MOYNIHAN, I. W. & MUSFELDT, I. W., 1950.—"Gapeworm infestation of pheasants." 14 (9), 308-310. [French summary pp. 309-310.]

- c. CONNELL, R., 1950.—"Enterohepatitis (blackhead) in turkeys. VI. Abnormalities, possibly caused by a stage of *Histomonas meleagridis*, occurring in second stage larvae of blackhead-transmitting *Heterakis gallinae*." 14 (10), 331-337. [French summary p. 337.]

(174a) Swales reviews the literature on the transmission of enterohepatitis and records experiments designed to discover if the disease could be transmitted under natural conditions in the absence of embryonated eggs of *Heterakis gallinae*. He confirms that the disease can readily be set up with embryonated eggs of *H. gallinae*, but in the absence of such eggs the disease was not transmitted from fowl to susceptible turkey poults by close contact or by the ingestion of faeces from clinically affected poults. The elimination of *H. gallinae* from poultry farms is suggested as a basic measure of prevention of blackhead. J.W.G.L.

(174b) In a commercial flock of 3,000 pheasants in Vancouver many of the young birds died from heavy infections with *Syngamus trachea*. Several birds were placed in a specially constructed box of 8 cu. ft. and exposed to a total of one ounce of finely powdered barium antimonyl tartrate for 20 minutes. An electric fan circulated the air freely for five minutes. This was repeated twice, and five minutes after the last portion of the drug had been circulated the birds were released. The treatment was effective and economical. R.T.L.

(174c) In a proportion of the second-stage larvae of *Heterakis gallinae*, obtained from turkeys with blackhead, Connell has observed cuticular swellings, diffuse thickenings in the oesophageal or intestinal regions, and proctodeal and caudal abnormalities. The rate of abnormal to normal larvae in different blackhead-carrying stocks ranged from 1:2000 to 1:150. No such abnormalities were observed in larvae from healthy stocks. It is assumed, therefore, that these abnormalities may be due to a developmental phase of *Histomonas meleagridis*. R.T.L.

175—Časopis Lékařů Českých.

- a. JIROVEC, O., 1950.—"Výskyt roupů u dětí ve věku 6-14 let v Čechách." 89 (19), 536-540. [English & Russian summaries p. 540.]

(175a) Of 2,537 children in Czechoslovakia, 62.8% were found to be infected with *Enterobius vermicularis*. The incidence was lowest in Prague and highest in rural schools. Anthelmintic treatment of light infections is deprecated as the damage to the intestine due to prolonged treatment may be greater than that caused by the parasites. R.T.L.

176—Ceylon Journal of Science. Section B. Zoology.

- a. FERNANDO, W., 1950.—"*Cyclocoelum* (*Pseudhyptiasmus*) *sinhaladvipa*, sp.nov., a parasite from the nasal sinus of the Ceylon jungle fowl (*Gallus lafayetti*)." 24 (2), 127-129.
b. CRUSZ, H., 1950.—"Observations on some spirurid nematodes from Ceylon vertebrates." 24 (2), 131-134.

(176a) Fernando describes a cyclocoelid trematode collected from the nasal sinus of the Ceylon jungle fowl, *Gallus lafayetti*, and names it *Cyclocoelum* (*Pseudhyptiasmus*) *sinhaladvipa* n.sp. H.C.

(176b) Crusz reports the occurrence of *Pseudophysaloptera riakiuana* in the stomach of the Indian grey musk-shrew, *Suncus caeruleus giganteus*, in Ceylon. He refers to this species the worms previously described as *P. soricina* from Ceylon, by both Baylis and himself. He briefly discusses the geographical distribution of *Pseudophysaloptera* spp. *Physaloptera varani* from the stomach of the Indian monitor, *Varanus monitor*, is redescribed and the presence of eggs in the hind-gut of nine out of ten male worms is noted. *Streptopharagus pigmentatus* from the dusky toque monkey, *Macaca sinica aurifrons*, is recorded from Ceylon for the first time. H.C.

177—Chronicle of the World Health Organization.

- a. ANON., 1950.—"Bilharziasis in the Pacific." 4 (10), 313-314.

178—Clinica Veterinaria. Milan.

- a. CASAROSA, L., 1950.—"La cisticercosi del bovino. Considerazioni sui cisticerchi con particolare riferimento al *C. dromedarii* (Pellegrini, 1945)." 73 (2), 33-38.

(178a) Casarosa gives brief notes on the two cysticerci likely to be found in cattle, namely *Cysticercus bovis* and (rarely) *C. tenuicollis*. This is followed by a full description of the larval form of *Taenia hyaenea*, *C. dromedarius*, which may be found in the mesenteric lymph nodes, muscular masses, brain, heart and tongue of cattle imported into Italy from Somaliland. Because of the importance of accurate recognition of this parasite at meat inspection, characters differentiating it from *C. bovis* and from *C. tenuicollis* are discussed item by item. E.M.S.

179—Cultuur en Handel. Brussels.

- a. HALLEMANS, A., 1950.—"Practische grondontsmetting tegen wortelaaltjes in de groenteteelt met zwavelkoolstofemulsie." 16 (3), 175-176.

(179a) Hallemans suggests that a carbon disulphide emulsion (5% in water), applied at 10 litres per square metre, is useful for controlling root-knot eelworm and has the advantages of being cheaper than chloropicrin or D-D mixture and of needing no special equipment. [No evidence of efficacy is given.] B.G.P.

180—Deutsche Tierärztliche Wochenschrift.

- a. JACOB, E., 1950.—"Parasiten-Funde bei freilebenden Tieren und ihre Beziehung zur allgemeinen Ökologie." 57 (37/38), 306-309.
 b. WETZEL, R., 1950.—"Zur Auswertung des mikroskopischen Kotbefundes bei der Magenwurmkrankheit der Rinder." 57 (39/40), 323-325.
 c. MAKSIĆ, D. & BECK, E., 1950.—"Mandaverm' (Asta-Werke, Brackwede) ein neues Spulwurmmittel beim Pferd." 57 (41/42), 348-349.

(180a) Jacob pleads that more attention be paid to the parasites of wild animals, such as pole-cats, ferrets and moles, and suggests that systematic surveys of the parasitic fauna of these animals (as opposed to occasional examination of isolated specimens) would give much valuable information on the ecology of parasites of domestic animals. As an example he reports the finding of *Pseudostrongylus putorius* in 26 out of 30 pole-cats examined in the Weser-Ems district, although in England this parasite had been found in only one single instance. A.E.F.

(180b) Wetzel points out that the adequate prevention and treatment of stomach worm disease in cattle depends on the specific diagnosis of the causal parasite: the bionomics of the different species varies, as do their pathology and reaction to anthelmintics. The most common stomach worms of cattle in Germany are *Haemonchus contortus*, *Ostertagia ostertagi* and *Cooperia oncophora*, and Wetzel gives directions for the qualitative and quantitative determination of these parasites in faecal specimens. Attention is drawn to the fact that clinical symptoms in young cattle with very low worm counts may be due primarily to nutritional deficiencies. A.E.F.

(180c) Maksić & Beck have successfully used "Mandaverm" (an iso-amyl ester of mandelic acid) against *Ascaris* infection in horses. The therapeutic dose of 0.5-0.6 c.c. per kg. body-weight, administered by nasal sound in half to one litre of water, was very well tolerated and no pre- or post-treatment was necessary. Of 11 infected horses subjected to egg-counts 14 days after treatment, eight were entirely free from infection, one showed only five eggs, and one had a 75% reduction in egg-count: the remaining horse showed no improvement. A.E.F.

181—Documenta Neerlandica et Indonesica de Morbis Tropicis.

- a. HAUSMAN, R., YOE TJIN LIONG & FOSSEN, A., 1950.—"A case of cysticercosis, with some notes on taeniasis in Indonesia." 2 (1), 59-61.

(181a) A case of cysticerciasis in a Chinese who had never left Java is reported. One cyst was observed by his dentist on the back of the tongue; 18 other cysts were discovered as movable swellings under the skin of the neck, shoulders and trunk. When an excised cyst is placed in bile, or physiological saline with a few drops of bile added, and kept at 37°C. for 15-30 minutes the scolex evaginates.

R.T.L.

182—Dokladi Akademii Nauk SSSR.

- a. GNEDINA, M. P., 1950.—[Biology of the nematode, *Onchocerca gutturosa* Neumann, 1910, parasitic in cattle.] 70 (1), 169-171. [In Russian.]
 b. GUBANOV, N. M., 1950.—[Influence of the condition of the environment on change in the morphology of nematodes of birds.] 70 (1), 173-175. [In Russian.]
 c. BRAUDE, G. L., 1950.—[The topographical anatomy of the reproductive apparatus of the medicinal leech.] 70 (2), 307-310. [In Russian.]
 d. BOEV, S. N. & SCHULZ, R. S., 1950.—[Reconstruction of the systematics of the nematode family Protostrongylidae Leiper, 1926.] 70 (2), 355-358. [In Russian.]
 e. KOMAROVA, M. S., 1950.—[An inquiry into the life-cycle of *Acanthocephalus lucii* Müll.] 70 (2), 359-360. [In Russian.]
 f. MARKOV, G. S., 1950.—[Parasite fauna of reptiles in the Leningrad region.] 70 (3), 541-543. [In Russian.]
 g. KRASTIN, N. I., 1950.—[A study of the developmental cycle of the nematode, *Thelazia gulosa* (Railliet & Henry, 1910), a parasite of the eyes of cattle.] 70 (3), 549-551. [In Russian.]
 h. KUZNETSOV, V. V. & CHUBRIK, G. K., 1950.—[The influence of larval trematode infection on the reproduction rate of some marine gastropods.] 70 (6), 1101-1104. [In Russian.]
 i. BIKHOVSKAYA-PAVLOVSKAYA, I. E., 1950.—[New species of kidney parasites (genus *Renicola*) from birds.] 71 (2), 415-416. [In Russian.]
 j. SKRYABIN, K. I. & SHIKHOBALOVA, N. P., 1950.—[A revision of the systematics of the nematode family Heteroxyematidae Skryabin & Shikhobalova, 1948.] 71 (3), 589-591. [In Russian.]
 k. BELYAEV, G. M. & SELIGMAN, E. A., 1950.—[Trematode infection of some invertebrates of the White Sea dependent on their osmoregulatory faculty.] 71 (4), 813-815. [In Russian.]
 l. KIRYANOVA, E. S., 1950.—[A new genus of water worms (*Progridius* gen.nov.) from Tadzhikistan.] 71 (6), 1171-1173. [In Russian.]
 m. BOGOLEPOVA, I. I., 1950.—[Monogenetic trematodes endemic in Baikal fishes.] 72 (1), 229-232. [In Russian.]
 n. GINETSKINSKAYA, T. A., 1950.—[New data on the mechanism of penetration and migration of cercariae in the tissues of the host.] 72 (2), 433-435. [In Russian.]
 o. SMIRNOV, G. G. & KAMALOV, N. G., 1950.—[The susceptibility of amphibians to percutaneous infection with ancylostome larvae.] 72 (2), 437-439. [In Russian.]
 p. MOZGOVOI, A. A. & RIZHIKOV, K. M., 1950.—[An inquiry into the origin of the Baikal seal in the light of helminthological science.] 72 (5), 997-999. [In Russian.]
 q. DELYAMURE, S. L., 1950.—[Phylogenetic relationship of dolphins and terrestrial carnivores (Mustelidae) in the light of helminthological science.] 73 (1), 237-239. [In Russian.]

(182a) Gnedina fed *Simulium ornatum*, hatched in the laboratory, on cattle infected with *Onchocerca gutturosa*. Of 299 specimens used, 104 were dissected, and in 26.3% of them larvae were found in the organs and tissues, varying in number from 1 to 507. Study of the larvae revealed five different stages, which are described, the first and second localized in the lumen of the midgut and the third, fourth and fifth in the thoracic muscles. The larvae reached the infective stage on the 35th day after experimental infection and were localized in the thoracic muscles.

C.R.

(182b) Gubanov describes *Tetrameres sobolevi* n.sp. from the wall of the glandular stomach of *Pernis apivorus*. The main characteristic of the new species is the absence of surface spines and the presence of spicules in the male. He considers that the genus *Tetrameres* should be divided into the subgenus *Tetrameres*, with males provided with longitudinal rows of spines, and the subgenus *Gynaecophila*, with males devoid of longitudinal rows of spines. Males of *Tetrameres* feeding in the lumen of the stomach are

provided with strong chitinous spines, but in the case of the new species Gubanov considers that the spines were lost when the habitat was changed to the glandular wall of the stomach.

C.R.

(182c) Braude describes the position of the sexual organs of *Hirudo medicinalis* in relation to the ventral nerve cord and to the external rings of the body. The investigations were carried out on mature leeches and on a live specimen 5-7 days after leaving its cocoon.

C.R.

(182d) Boev & Schulz propose to divide the family Protostrongylidae into subfamilies as follows. Elaphostrongylinae n.subf., with one or two dorsal rays of the bursa divided into two branches and the posterior end of the female short and blunt, contains two genera, *Elaphostrongylus* and *Parelaphostrongylus* n.g. In the new genus there are two dorsal rays, divided into two branches, and the accessory piece is composed of the two corpora and two feet. Protostrongylinae contains two genera, *Protostrongylus* and *Spiculocaulus*. Muellieriinae contains *Cystocaulus* and *Muellerius*. Neostongylinae n.subf., with the telamon of very complicated structure and with the postero-lateral ray of the bursa equal to the two other lateral rays, contains the two genera *Neostongylus* and *Orthostongylus*. Capreocaulinae contains six genera, *Pneumostongylus*, *Bicaulus*, *Varestrongylus*, *Pneumocaulus*, *Capreocaulus* and *Leptostrongylus*.

C.R.

(182e) Komarova has studied the seasonal incidence of *Acanthocephalus lucii* in perch. The lowest percentage of infection was found in October and the highest in May. She is of the opinion that these *Acanthocephala* produce eggs in the summer and then die, and thus the percentage of infected fish falls gradually at this time. They become infected again at the end of the autumn, and in winter the percentage of infection is rising. During winter and spring the parasites grow and in the following summer become sexually mature.

C.R.

(182f) Markov examined 54 *Lacerta vivipara*, 20 *Anguis fragilis* and 32 *Vipera berus* in the Leningrad district and found the following helminths: *Plagiorchis mentulatus*, *Tetracotyle colubri*, *Rhabdias entomelas*, *Oswaldocruzia filiformis*, *O. dispar*, *Occipidentus fimbriatus*, *Aplactana acuminata*, *Amplicaeum* sp., *Angusticaecum* sp. and *Agamonema* spp. A table showing the species and their habitat in each reptile host is given.

C.R.

(182g) Krastin examined 6,869 specimens of *Musca amica* in the Far Eastern Region and obtained in all 30 infective larvae of *Thelazia*. He infected a 7-day-old calf, and six weeks later when the calf was killed one specimen of *Thelazia gulosa* was found in the ducts of the lachrymal glands. The life-cycle is said to be very much like that of *T. rhodesii*. *M. amica* is probably also the intermediate host of *T. skrjabini*.

C.R.

(182h) Kuznetsov & Chubrik examined the following gastropods of the Eastern Murman coast for the larval stages of *Podocotyle* and *Spelotrema*: (i) littoral forms: *Littorina saxatilis*, *L. obtusata*, *Purpura lapillus*, *Rissoa aculeus*, *Margarita helicina*, *Lacuna pallidula*, *L. vineta*; (ii) sublittoral forms: *Solariella obscura*, *S. varicosa*, *Margarita gronlandica*, *Natica clausa* and *Buccinum undatum*. They found that parasitism of these molluscs plays an important role in that it produces sterility and reduces the yearly rate of reproduction. The species of molluscs which serve as food for fishes and birds are mainly infected.

C.R.

(182i) Bikhovskaya-Pavlovskaya describes *Renicola mediovitellata* n.sp. from the kidney tubules of *Nyroca ferina*, *Anas strepera* and *Spatula clypeata*; also *Renicola magnicaudata* n.sp. from the kidney tubules of *Hirundo rustica*. A figure of each new species is given [but no differential diagnosis].

C.R.

(182j) Skryabin & Shikhobalova discuss the systematic position of the family Heteroxyenematidae and conclude that it should be classified as follows: subfamily Heteroxyenematinae n.subf. with the genera *Dermatopallaria*, *Dermatoxys*, *Heteroxyenema* and *Dentostomella*; subfamily Aspiculurinae n.subf. with the genera *Labiostrum*, *Eugenuris* and *Aspiculuris*; subfamily Acanthoxyurinae with the genera *Acanthoxyuris* and *Cephaluris*. The paper contains a full diagnosis of each subfamily and a key to all the genera. C.R.

(182k) In 1946-48, Belyaev & Seligman were examining the parasitic fauna of certain invertebrates living in the littoral region in the White Sea. They found that in water with 19-26‰ salinity, *Littorina littorea*, *L. rudis* and *L. palliata* were infected with larvae of *Spelotrema*. When the same three species of *Littorina* were examined from the area with 17‰ salinity there was no *Spelotrema* infection, but *Littorina rudis* and *L. palliata* from this area were infected with the larvae of *Podocotyle*. Littoral *Gammarus locusta* was found infected (60%) with metacercariae of *Spelotrema*. They found that larvae of Microphallidae from *Littorina* when placed in sea water with a salinity of 20-26‰ lived up to two days, and when the salinity was reduced below 17‰ they died in 4-6 hours. The metacercariae of Microphallidae dissected from *Gammarus locusta* and placed into water with 12-15‰ salinity died in a short time, but when placed into water with 20-26‰ salinity they lived for a long time. It is thought that the infection of *Gammarus* takes place in the winter months when they migrate into the sublittoral areas of greater salinity. C.R.

(182l) Kiryanova describes from three male specimens *Progordius maculosus* n.g., n.sp. from an unknown host. She creates for it a new genus *Progordius*, which differs from *Paragordius* in the structure of the head end and in the structure of the cuticle. The detailed description of the new genus and species with figures is included. C.R.

(182m) Bogolepova describes *Dactylogyrus colonus* n.sp. from the gills of *Limnocottus bergianus* and *L. godlewskii* caught at a depth of 500-800 metres, *Gyrodactylus baicalensis* n.sp. from the gills and fins of *L. godlewskii* and *Batrachocottus multiradiatus* caught at a depth of 15-800 metres, *G. bychowskianus* n.sp. from the gills of *Cottocomephorus grewingkii* caught at a depth of 20 metres, and *G. comephori* n.sp. from the fins and gills of *Comephorus dybowskii* caught at a depth of 400 metres. All the fish were caught in the Baikal Lake. C.R.

(182n) Ginetsinskaya, in experiments with *Cercaria gracilis* and *C. pseudoarmata* from *Limnaea stagnalis*, found that the essential factor in the mechanism of penetration of cercariae through living membranes is the secretion of hyaluronidase (a mucolytic enzyme). It is thought that this enzyme is produced by the penetration glands of the cercariae. C.R.

(182o) Smirnov & Kamalov were unable to produce infection in frogs by placing larvae of *Ancylostoma duodenale* and *Necator americanus* on the skin, or by introducing them into the lymphatic spaces. *In vitro* they were also unable to obtain penetration through the skin. C.R.

(182p) After comparing *Contracaecum* from *Phoca sibirica* with material from *Phoca hispida*, Mozgovoi & Rizhikov conclude that the parasite from *P. sibirica* differs slightly and therefore they create for it a new subspecies *Contracaecum osculatum baicalensis* n.subsp. From the comparison of these species they draw the conclusion that *P. sibirica* is of northern origin. C.R.

(182q) Delyamure compares *Skrjabingylus nasicola*, a parasite of Mustelidae, with *Skrjabinalius cryptocephalus*, a parasite of *Delphinus delphis ponticus*, both species belonging to the same subfamily Skrjabingylinae. He draws the conclusion that morphological, physiological and ecological and biological similarities are not only proof of the phylogenetical relationship of these two genera of nematodes, but also of the Delphinidae and Mustelidae. This supports the view that the Cetacea and Carnivora are phylogenetically related.

C.R.

183—Down to Earth. Midland, Michigan.

- a. WARREN, G. F., 1950.—“Sweet potatoes and muskmelons respond to soil fumigation in southern Indiana.” 5 (4), 16.
- b. ANDERSON, P. J., 1950.—“Nematodes on tobacco.” 5 (4), 18-19.

(183a) Warren reports on spring injections of D-D mixture at 25 gal. per acre and of 20% (v/v) ethylene dibromide at 15 gal. per acre, in strips 12 in. apart and 6 in. deep, in sandy soils in southwest Indiana. Yields of muskmelon and sweet potato were significantly increased by both fumigants, D-D being the better at the dosages used. In muskmelon heavy infestations of root-knot were effectively controlled. This eelworm was not found in the sweet potato plots, where the cause of the increased yield is not obvious.

B.G.P.

(183b) Anderson has injected ethylene dibromide at 3 gal. per acre in strips 10 in. apart and 6 in. deep, in May, in a Connecticut tobacco field apparently suffering from nematode infestation. Both yield and grading of leaves were improved, leading to a 23% increase in crop value which more than paid for the injection. In another experiment, ethylene dibromide and a dichloropropylene mixture were used and soil ammonia and nitrate were determined weekly. For the first four or five weeks ammonia was greatly increased at the expense of nitrate. Subsequently the ammonia levels fell (but remained above control levels) and the nitrate levels increased above control levels, for the remainder of the test (12 weeks in all). The more abundant supply of nitrate nitrogen in later stages of growth may partly explain increased yield.

B.G.P.

184—Extension Bulletin. Washington State College.

- a. GOULD, C. J., 1950.—“Diseases of bulbous iris.” No. 424, 32 pp.

(184a) Gould describes briefly the symptoms of attack on leaves, stems and bulbs of bulbous iris by nematodes. He states that the disease is one of the worst iris diseases of the past few years but that the use of hot water formalin treatment (three hours at 110-111°F. with addition of one pint of formalin per 25 gal. water) is bringing the disease under control. The optimum date for treatment is uncertain since numerous factors influence bulb maturity. There is a good photograph of diseased bulbs. The causal agent is stated as “one or more species of nematode to be described and named by Dr. G. Steiner in the near future”.

J.B.G.

185—Farmers Weekly. London.

- a. GOODEY, T., 1950.—“The clover eelworm observed.” 32 (21), 53, 55.

(185a) Goodey presents a somewhat popular account of his paper on eelworm infestation of red clover published in *Ann. appl. Biol.*, 1950, 37 (2), 324-327 [for abstract see *Helm. Abs.*, 19, No. 53b]. It is illustrated by photographs showing eelworm-infested clover seedlings.

T.G.

186—Gartner-Tidende.

- a. LINDHARDT, K., 1950.—"Jordbaerål." 66 (18), 202-203.

(186a) Lindhardt gives a description of the symptoms of attacks on strawberry by *Aphelenchoides fragariae*. Very little is known of the distribution of this parasite in Denmark but certainly it is rather common. Some differences in resistance have been found; the variety "Dubdahl" is the most susceptible. Control of the nematode by chemicals has not yet been successful. Parathion is not effective and methyl bromide has no effect. S.B.

187—Giornale di Medicina Militare.

- a. SANTA CRUZ, F., 1950.—"Su di un caso di ciste da echinococco paravescicale." 97 (1), 66-71.

188—Hospital. Rio de Janeiro.

- a. PESSOA, S. B. & ARAUJO ANDRADE, Z. DE, 1950.—"Alguns dados sobre a incidência da filaria, *Wuchereria bancrofti* na cidade do Salvador—Bahia." 37 (4), 593-598.

(188a) The incidence of microfilariae of *Wuchereria bancrofti* in the night blood of 934 residents of Salvador, Bahia, was 4.6%. Four tables set out the incidence by sex, colour, age and locality. 12.5% of 56 specimens of *Culex quinquefasciatus* were found infected on dissection.

R.T.L.

189—Imprensa Médica. Rio de Janeiro.

- a. LEMOS, J. DE, 1950.—"A volta das sanguessugas." 25 (433), 82-84.

190—Indian Medical Gazette.

- a. SUBRAHMANYAN, K. & BHASKARAN, T. R., 1950.—"The risk of pollution of ground water from borehole latrines." 85 (9), 418-420.
b. DAVE, C. J., 1950.—"Generalized cysticercosis cellulosae." [Correspondence.] 85 (9), 433.

(190a) From a study of the results of previous workers on the pollution flow from bored-hole latrines under different soil conditions, it is concluded that the distance of bacterial pollution in subsoil water is not more than that covered by the ground water in four to seven days. The distance becomes reduced after a few weeks when a gelatinous membrane is established on the soil particles. Hence the safe distance between a bored-hole latrine or leeching cesspit and a ground water source may be taken to be that represented by eight days travel of the ground water. In rural wells or tube wells a distance of 25 feet is suggested as a safe margin.

R.T.L.

(190b) In his article "Generalized cysticercosis cellulosae" [for abstract see Helm. Abs., 19, No. 85b], Dave omitted to mention the three cases reported from Madras by Menon & Veliath in *Trans. R. Soc. trop. Med. Hyg.*, 1940, 33 (5), 537-544 [for abstract see Helm. Abs., 9, No. 53c.]

R.T.L.

191—Journal of Allergy.

- a. KAILIN, E. W., ROSSBACH, E. A. & WALZER, M., 1950.—"Factors influencing reagin formation in experimental human sensitization to *Ascaris lumbricoides* antigen. IV. The influence of a previous sensitization on rate of sensitization." 21 (3), 225-231.

(191a) Kailin *et al.* found that 79% of 33 subjects who had been artificially sensitized to *Ascaris lumbricoides* antigen lost their sensitivity in two years. The subjects who failed to react to the antigen were given a second series of sensitizing injections; the average time for the reappearance of positive skin reactions was two to eight weeks as compared with five to nine weeks in their former sensitization. The possible interpretations of the results and their bearing on previous studies are discussed.

W.P.R.

192—Journal of the American Veterinary Medical Association.

- a. LINK, R. P., LEVINE, N. D., DANKS, A. G. & WOELFFER, E. A., 1950.—“*Moniezia* infection in a calf herd.” 117 (880), 52–53.
- b. ANON., 1950.—“Cysticercosis and trichinosis.” [Exhibit shown at the American Medical Association convention, San Francisco, June 26–30, 1950.] 117 (881), 100–101.
- †c. TURK, R. D., 1950.—“Internal parasites of farm animals. Diagnosis and control.” 117 (881), 102.
- †d. DONALDSON, A. W., STEELE, J. H. & SCATTERDAY, J. E., 1950.—“Creeping eruption in the southeastern United States.” 117 (881), 115.
- †e. TODD, A. C., 1950.—“Intestinal parasitism and poultry production in the South.” 117 (881), 120.
- f. SWANSON, L. E. & HOPPER, H. H., 1950.—“Diagnosis of liver fluke infection in cattle.” 117 (881), 127–129.
- g. WILLMAN, J. P., BAKER, D. W. & EMBRY, L. B., 1950.—“Methods of internal parasite control in sheep and lambs.” 117 (881), 136–138.
- h. TURK, R. D., 1950.—“Guinea-worm (*Dracunculus insignis*, Leidy 1858) infection in a dog.” 117 (882), 215–216.

(192a) Heavy infestation with *Moniezia expansa* is considered to be the cause of severe losses in a calf herd in Illinois. The clinical history and symptoms are described. Treatment with lead arsenate at doses of 0.5–1.5 gm., according to size of animal, removed great numbers of tapeworm segments. An uneventful recovery took place following this treatment after further access to the pasture had been prevented and thorough cleaning of the yard and calf barn had been carried out. J.W.G.L.

(192f) Swanson & Hopper describe a simple and efficient method of carrying out egg counts on faeces from cattle infected with liver-fluke. The sample is washed through sieves of 20, 40 and 60 mesh to the inch, then allowed to sediment. The supernatant is removed by syphoning off with a U-shaped tube to avoid removal of any eggs, and samples of the sediment are then concentrated and washed by centrifuging twice prior to examination under the low power microscope in a 90 mm. petri dish. Staining of the eggs by adding a few drops of 15% tincture of iodine aids detection and counting of the eggs. J.W.G.L.

(192g) Observations covering five years on a flock of sheep grazed on hill pasture in New York State indicate that worm burdens can be controlled by drenching the ewes and lambs with a therapeutic dose of phenothiazine before going to pasture and again on coming in to winter quarters. Phenothiazine and salt mixture should be allowed at pasture and alternate grazing provided. Additional anthelmintic treatment during the grazing season by monthly dosing with phenothiazine or copper and nicotine sulphate did not result in any weight gains in these trials. J.W.G.L.

(192h) Turk has examined two specimens of *Dracunculus insignis* from a dog in Houston, Texas. This brings to four the number of cases reported to date in the United States. R.T.L.

193—Journal of the Biological Photographic Association.

- a. SCHLOSSER, R. J., 1950.—“Photomicrography of the developing larvae of *Wuchereria bancrofti* in a mosquito host of the South Pacific area.” 18 (1), 12–15.

(193a) [This paper gives technical details of Schlosser's article in *Amer. J. trop. Med.*, 1949, 29 (5), 739–745. For abstract see Helm. Abs., 18, No. 141j.]

194—Journal of the Elisha Mitchell Scientific Society.

- a. LARSH, Jr., J. E. & GILCHRIST, H. B., 1950.—“The effect of a vitamin A deficient diet on the natural and acquired resistance of mice to infection with *Trichinella spiralis*.” 66 (1), 76–83.

(194a) Neither natural nor acquired resistance of mice to experimental infection with *Trichinella spiralis* was affected by a vitamin A deficient diet. R.T.L.

† Abstract of paper to be presented at the 87th Annual Meeting of the American Veterinary Medical Association, Miami Beach, August 21–24, 1950.

195—Journal of Entomology and Zoology.

- a. WONG, H. Y. C. & MARTIN, W. E., 1950.—"Intestinal parasites of certain Chinese students at the University of Southern California." 42 (2), 13-15.
- b. MARTIN, W. E., 1950.—"A severe larval cestode infection in the California black bear." 42 (2), 16-19.

(195a) In 26 Chinese American-born students at the University of Southern California there were no helminths. Among 29 Chinese-born students there was one with *Trichuris trichiura* and one with *Clonorchis sinensis* and *Trichuris trichiura*. The latter had been given a health clearance by the Chinese Government in 1948. R.T.L.

(195b) The carcass of a female bear *Ursus americanus californiensis* shot in Santa Ana Canyon, San Bernardino County, California, was riddled with cysticerci and condemned as unfit for human consumption. The identification of the cysts awaits the completion of feeding experiments. Cysticerciasis has not been recorded previously in this host. R.T.L.

196—Journal of Helminthology.

- a. MORGAN, D. O., PARNELL, I. W. & RAYSKI, C., 1950.—"Further observations on the seasonal variation in worm egg output in Scottish hill sheep." 24 (3), 101-122.
- b. EDWARDS, E. E., 1950.—"Experiments with D-D mixture against root-knot eelworm, *Heterodera marioni* (Cornu)." 24 (3), 123-136.
- c. CLAPHAM, P. A., 1950.—"On sterilizing land against poultry parasites." 24 (3), 137-144.
- d. SOUTHEY, J. F. & STANILAND, L. N., 1950.—"Observations and experiments on stem eelworm *Ditylenchus dipsaci* (Kühn, 1857) Filipjev, 1936, with special reference to weed hosts." 24 (3), 145-154.

(196a) The authors have expanded the investigation commenced by Morgan & Sloan [see Helm. Abs., 16, No. 153a] and record the results obtained from periodic egg-counts on nearly 1,500 Scottish hill sheep over a period of two years. The seasonal pattern of worm egg output was again clearly defined, particularly in adult sheep, where a large proportion in each flock showed an increase in egg production during the period April to June; this was followed by a gradual fall to a low level in January. Young sheep, while giving the highest averages in egg-counts were far more erratic and did not, in all the flocks examined, show such a clear seasonal pattern as that of the adult sheep. It is considered that the spring increase in egg output, although occurring under widely different climates and methods of sheep husbandry, may be influenced as regards its height and duration by weather conditions on Scottish hills. The authors emphasize the need for qualitative and quantitative studies on the seasonal variations in the worm burden of sheep so that a scheme of prophylactic anthelmintic treatment, which is both practical and effective, can be recommended. D.O.M.

(196b) Edwards has injected D-D mixture at 0, 200, 300 and 400 lb. per acre in duplicate plots in a glasshouse infested with root knot. The house normally carried tomatoes, chrysanthemums and lettuce successively each year and was free from other obvious pests and diseases. There was a roughly linear response with dosage in respect of total height of plants, number of trusses formed, number of marketable tomatoes on the third and fourth trusses, and severity of infestation of the roots with galls (the last criterion inverse). In most respects the good effects of treatment consisted in the higher proportions of normal healthy plants with increasing dosage. Even at the highest rate not more than 24% of plants were quite free from galls. No taint was detectable in the fruit. B.G.P.

(196c) Clapham has successfully destroyed helminth ova in soil by sterilizing it with methyl bromide. Ova of *Heterakis gallinae*, *Ascaridia lineata* and *Syngamus trachea*, in both the freshly passed and the embryonated states, were destroyed in this way. The evidence as to its action on eggs of *Choanotaenia infundibulum* is inconclusive. P.A.C.

(196d) Southey & Staniland have made numerous observations and experiments on the weed hosts of the red clover, oat, teasel, phlox and narcissus races of *Ditylenchus dipsaci* in the west of England. They point out the importance of these weeds as hosts of the eelworm and also the need for more observations and transfer experiments to be carried out.

J.B.G.

197—Journal of the Indian Medical Association.

- a. RAMAN, T. K., RAMAMURTHY, B. & PINAKAPANI, S., 1950.—“Hetrazan (1-diethyl-carbamyl-4-methylpiperazine hydrochloride) (diethylcarbamazine) in the treatment of filariasis (*Wuchereria bancrofti*).” 19 (5), 163-172.

(197a) After summarizing the literature on the use of hetrazan in various filarial infections, detailed reports are given of the results of treatment of seven cases infected with *Wuchereria bancrofti* at King George Hospital, Vizagapatam. The dose varied from 75 mg. to 450 mg. (0.45 mg. to 2.2 mg. per kg. body-weight) daily for 21 days. Clinical symptoms, except in one case of chyluria, disappeared. Microfilariae fell rapidly up to the 5th day and thereafter remained constantly low. In two cases where the dose was increased to 2.2 mg. per kg. body-weight, a rapid fall occurred in 48 hours. The toxic symptoms were fever, headache, pains all over the body, increased pain and tenderness in the testes, and subcutaneous nodular swelling.

R.T.L.

198—Journal of Parasitology.

- a. PERKINS, K. W., 1950.—“A new cestode, *Raillietina* (R.) *multitesticulata* n.sp. from the red howler monkey.” 36 (4), 293-296.
- b. HADERLIE, E. C., 1950.—“A new species of *Triganodistomum* (Trematoda: Lissorchiidae) from the Sacramento sucker, *Catostomus occidentalis* Ayres.” 36 (4), 297-300.
- c. TINER, J. D., 1950.—“Two new species of *Trichuris* from North America, with redescrptions of *Trichuris opaca* and *Trichuris leporis* (Nematoda: Aphasmidia).” 36 (4), 350-355.
- d. MARTIN, W. E., 1950.—“*Parastictodora hancocki* n.gen., n.sp. (Trematoda: Heterophyidae), with observations on its life cycle.” 36 (4), 360-370.

(198a) Perkins describes a new species of *Raillietina* from *Alouatta peniculus* from northern British Guiana. The worms, 162 in number, were taken from the small intestine of the monkey. The new species is very similar to *R. (R.) alouatta* Baylis, 1947 from the black howler monkey, but differs in the following respects: maximum width, 3.2 mm.; acetabular hooks in 4-7 rows; position of genital pore; dimensions of cirrus; confluence of testes between poral and aporal groups; number of uterine capsules, 47-80; number of eggs per capsule, 3-8.

J.J.C.B.

(198b) *Triganodistomum polylobatum* n.sp. is described from *Catostomus occidentalis* taken from Clear Lake, Lake County, California. It differs from *T. attenuatum*, *T. mutabile* and *T. hypentelii* in the shape of the ovary. It resembles *Lissorhis fairporti* in possessing a lateral genital pore but there are no spines on the dorsal surface, the testes are fairly round, not oblong, and the relative size of the suckers and the distribution of the yolk glands differ.

R.T.L.

(198c) A key is provided for the differential diagnosis of the ten species of *Trichuris* which occur in North American rodents and lagomorphs. Two new forms are included, namely (i) *T. madisonensis* n.sp. in *Tamias striatus* from Madison, Wisconsin, which differs from *T. muris* in having larger eggs and a spicular diverticulum nearer the middle of the cloaca, (ii) *T. sylvilagi* n.sp. in *Sylvilagus floridanus mallurus* from Beltsville, Maryland. Some earlier reports of “*Trichuris leporis*” in cottontail rabbits probably refer to this species.

R.T.L.

(198d) *Parastictodora hancocki* n.g., n.sp. is described from adult flukes obtained in 4-6 days by feeding experimentally infected *Gillichthys mirabilis* and *Fundulus*

198—Journal of Parasitology (cont.)

- e. SMYTH, J. D., 1950.—"Studies on tapeworm physiology. V. Further observations on the maturation of *Schistocephalus solidus* (Diphylobothriidae) under sterile conditions *in vitro*." 36 (4), 371-383.
- f. HOPKINS, C. A., 1950.—"Studies on cestode metabolism. I. Glycogen metabolism in *Schistocephalus solidus* *in vivo*." 36 (4), 384-390.
- g. SCHÜFFNER, W., SWELLENGREBEL, N. H. & BOOL, J., 1950.—"Retrofection in oxyuriasis. Conclusions." 36 (4), 391-393.
- h. ANDERSON, D. J. & CABLE, R. M., 1950.—"Studies on the life history of *Linstowiella szidati* (Anderson)-(Trematoda: Strigeatoidea: Cyathocotylidae)." 36 (5), 395-410.

parvipinnis parvipinnis to newly hatched chickens. These fishes had been infected with metacercariae after exposure to pleurolophocercariae from the marine snail *Cerithidea californica*. *Parastictodora* is differentiated from *Stictodera* and *Galactosomum*. The sporocyst, redia, cercaria and metacercaria of *P. hancocki* are also described and illustrated. It appears likely that the normal host is a fish-eating bird. R.T.L.

(198e) The histology and egg embryonation of *Schistocephalus solidus* cultured *in vitro* in aseptic liquid media at 40°C. are compared with those of worms normally matured in birds. Spermatozoa were never found even in those cultured worms which produced eggs with a high percentage embryonation, whereas the receptacula seminis of worms matured in birds always contained large masses of spermatozoa. The oxygen tension of the medium was an important controlling factor, normal development requiring semi-anaerobic conditions. The embryonated eggs produced *in vitro* contained "normal" coracidia which hatched easily, or "miniature" coracidia about half the natural size, which hatched only after pricking the shell, or "abnormal" coracidia in which the embryophore failed to develop normally and could not be hatched. R.T.L.

(198f) Analysis of *Schistocephalus solidus* plerocercoids of over 100 mg. fresh weight taken from the body-cavity of *Gasterosteus aculeatus* gave the following composition: water 68.22%, glycogen 16.2%, protein 11.4%, ash 1.85%, undetermined 2.33%. The glycogen showed no seasonal variation, but after incubation in pigeon's gut a statistically significant decrease occurred at first but ceased after 48 hours. There was also a statistically significant concentration of the plerocercoids in the second quarter of the intestine, suggestive of correlation with that of the simplest products of digestion. R.T.L.

(198g) A new experimental study of peranal infection with *Enterobius vermicularis* is reported. The primary attack confirms the prolonged prepatency of 76 days already reported in a previous experiment. The longevity of the females can extend to 101 days. As in the two earlier cases, there were prolonged chains of "recidives" whereas the seven peroral cases studied closed with an acute attack. The case "Sch." altered its character in the second year and changed completely from type R (retrofection) to type D (digital) and there was a marked increase in worm load. Systematic anal toilet for 101 days was instituted. Although theoretically this should have been undertaken every six hours it had to be limited to three washings daily. It resulted in a marked decrease in "recidives" but was not sufficient to effect eradication. It is assumed that clean adults do not owe their chronic oxyuriasis to finger or dust contamination but entirely to retrofection. R.T.L.

(198h) The furcocercous *Cercaria szidati*, described by Anderson in 1944, develops in sporocysts in *Campeloma rufum* and encysts in *Notropis cornutus*. When fed to chickens the metacercariae became adult. These are therefore named *Linstowiella szidati* (Anderson, 1944) n.comb. and *Cercaria szidati* should now be referred to as cercaria of *L. szidati*. The definition of the genus *Linstowiella* is emended in order to avoid reducing *Mesostephanus* to synonymy. The type species of *Linstowiella* (*L. viviparae*) encysts in molluscs. As *L. szidati* encysts in fish it is thought that the normal definitive host is a piscivorous bird. R.T.L.

198—Journal of Parasitology (cont.)

- i. OLSEN, O. W. & TOLMAN, C. D., 1950.—"Description of the male of the pinworm, *Skrjabinema parva* Dikmans, 1942 (Nematoda: Oxyuroidea) from deer, with an emendation of the genus." 36 (5), 411-415.
- j. SCHELL, S. C., 1950.—"A new species of *Physaloptera* (Nematoda: Spiruroidea) from the cotton rat." 36 (5), 423-425.
- k. CALERO, C., ORTIZ O., P. & SOUZA, L. DE, 1950.—"Helminths in rats from Panama City and suburbs." 36 (5), 426.
- l. AMEEL, D. J., CORT, W. W. & VAN DER WOUDE, A., 1950.—"Germinal development in the heterophyid, *Euryhalmis monorchis* Ameel, 1938." 36 (5), 427-432.
- m. RAUSCH, R. & KUNS, M. L., 1950.—"Studies on some North American shrew cestodes." 36 (5), 433-438.
- n. GOODCHILD, C. G., 1950.—"Establishment and pathology of gorgoderid infections in anuran kidneys." 36 (5), 439-446.
- o. BARLOW, C. H., 1950.—"Snail ponds." 36 (5), 447-450.

(198i) The male of *Skrjabinema parva* now described was obtained from mule deer (*Odocoileus hemionus hemionus*) in western Colorado. Its lips are markedly different from those of the female: the free edge is broadly oval without marginal indentation. The proximal end of the spicule is goblet-shaped whereas in *S. ovis* and *S. oreanni* it is club-shaped. There are two pairs of adanal papillae. A key is given for the four species of the two subgenera *Skrjabinema* and *Chilocrypta*, and Mönning's definition of the genus *Skrjabinema* is emended. R.T.L.

(198j) In *Physaloptera hispida* n.sp. from *Sigmodon hispidus littoralis*, the right spicule is consistently longer than the left while the third and fourth pairs of postanal papillae are asymmetrical. This new species occurred in 20% of the Florida cotton-rats examined. R.T.L.

(198k) The incidence of helminths in 400 rats collected in Panama City and its suburbs was: *Hymenolepis diminuta* 38%, *Gongylonema neoplasticum* 28%, *Protospirura muricola* 29%, *Strongyloides ratti* 16%, *Moniliformis moniliformis* 16%, *Nippostrongylus muris* 13%, *Hepaticola hepatica* 12%, *Cysticercus fasciolaris* 10%, *Trichuris muris* 2%, *Syphacia obvelata* 1%, and ova only of *Ascaris lumbricoides* 1%. R.T.L.

(198l) In the rediae of the heterophyid *Euryhalmis monorchis* there are no complex germinal masses which can continually produce new embryos. The multiplication of germinal cells is limited to the early development of the rediae as in amphistomes and notocotylids. The cercariae require a period of growth outside the rediae in the molluscan tissues to complete their development. It is suggested that the Heterophyidae may be a rather primitive group related to the amphistomes. R.T.L.

(198m) Various shrews are parasitized by 29 helminth species of which four are described as new, viz. *Hymenolepis blarinae* n.sp. from *Blarina b. brevicauda*, and *H. parva* n.sp., *H. schilleri* n.sp. and *H. falculata* n.sp. from *Sorex c. cinereus*. There is a key to the seven cestodes in North American shrews which includes these four new forms. It is based chiefly on the characters of the rostellar hooks. R.T.L.

(198n) *Gorgoderina attenuata* and *Gorgoderina amplicava*, which parasitize the bladder of *Rana catesbeiana* and *R. grylio*, have been found in the Wolffian ducts and encapsulated in the mesonephroi. *Gorgoderina attenuata* can attain sexual maturity when encapsulated. Eggs containing miracidia reach the outside by passing from the capsular cavity through the mesonephric tubules and the Wolffian duct. Death could be caused by massive infections. Juvenile gorgoderids were collected from the cloaca, urinary bladder, Wolffian ducts and mesonephroi of the tadpoles of *Rana pipiens*. R.T.L.

(198o) Barlow gives an illustrated description of the construction of experimental canals and ponds which can accommodate 10 to 50,000 snails for study in an artificial environment which closely reproduces the natural environment found in Egypt. R.T.L.

198—Journal of Parasitology (cont.)

- p. BEAVER, P. C., 1950.—"The standardization of fecal smears for estimating egg production and worm burden." 36 (5), 451-456.
- q. PENNER, L. R., 1950.—"*Cercaria littorinalinae* sp.nov., a dermatitis-producing schistosome larva from the marine snail, *Littorina planaxis* Philippi." 36 (5), 466-472.
- r. LARSH, Jr., J. E., 1950.—"The effect of thiouracil and thyroid extract on the natural resistance of mice to *Hymenolepis* infection." 36 (5), 473-478.
- s. JEFFERY, G. M., 1950.—"Incidence of *Enterobius vermicularis* in Puerto Rican children, with a comparison of two diagnostic methods." 36 (5), 485-488.
- t. MAGATH, T. B., 1950.—"The significance of finding clonorchiasis in persons in the United States." 36 (5), 494-495.
- u. REISH, D. J., 1950.—"Preliminary note on the life cycle of the acanthocephalan, *Polymorphus kenti* Van Cleave, 1947." 36 (5), 496.

(198p) Beaver's account of his method of estimating hookworm burden was based on egg counts in direct smears of faeces by means of a photoelectric light meter [see Helm. Abs., 18, 25n] but did not provide for the calibrating of the meter assembly or the preparation of standardized smears with a range of densities. These omissions are now remedied. The faeces used contained only *Ascaris* and *Trichuris* ova. R.T.L.

(198q) Dermatitis has been produced experimentally in human volunteers and in young California brown pelicans by the furcocercous *Cercaria littorinalinae* n.sp. obtained from the marine operculate gastropod *Littorina planaxis*, a common inhabitant of the rocky shores and islands of the Californian coast. No dermatitis followed the application of these cercariae to the underside of a young Californian sea-lion, although these animals have been observed to suffer from dermatitis of unknown origin. *C. littorinalinae* differs from other furcocercous cercariae with seven pairs of flame cells except the freshwater *C. polonica* and *C. gyrauli* in having, like these, a much shorter tail stem. *C. littorinalinae* is positively phototropic. If the snail is kept dry for more than a day, cercarial emergence follows within a few minutes when dropped into sea-water. R.T.L.

(198r) The natural resistance of young mice to experimental infection with *Hymenolepis nana* var. *fraterna* was not affected when their normal high metabolic rate was depressed by daily injections of thiouracil. The natural resistance of old mice was unaffected by daily doses of 2 mg. of thyroïd extract but was broken down when the dose was raised to 3.3 mg. for there were significantly more cysticercoids than in similarly treated young mice of the most susceptible age. The old mice "controls" harboured significantly fewer cysticercoids than these young mice. This is taken to indicate the development of age resistance. R.T.L.

(198s) When 84 children in San Juan, Puerto Rico, were examined for *Enterobius* by NIH swab, a 3.6% incidence was observed whereas the incidence was 11.9% when Graham's cellulose tape was used. The average number of ova per positive NIH swab was 2.7 whereas the positive cellulose tape gave an average of 116 ova. *Trichuris* ova were present in about 17% and *Ascaris* ova in about 10% of the cellulose tape samples but this method is not suggested for their routine diagnosis. R.T.L.

(198t) Magath and his colleagues have noted at the Mayo Clinic a number of cases of Clonorchis infection in returned missionaries and others who have lived in the Orient but the threat of its introduction remains negligible so long as the American public does not consume raw fish. R.T.L.

(198u) *Polymorphus kenti* is reported for the first time in *Larus occidentalis* and *L. glaucescens*. Juvenile acanthocephalans free in the haemocoel of the sand crab *Emerita analoga* occur frequently at Coos Bay, Oregon. These, when fed experimentally to rats, developed into immature *P. kenti*, 10-15 mm. long. It is probable therefore that the gulls become infected from eating infected sand crabs. R.T.L.

198—Journal of Parasitology (cont.)

- v. HUNTER, W. S., 1950.—“The nemertean, *Cerebratulus lacteus*, as an intermediate host for cestode larvae.” 36 (5), 496.
- w. TSUCHIYA, H. & AITKEN, L. F., 1950.—“An additional case of *Trichostrongylus* infection with a probable mode of transmission.” 36 (5), 502.
- x. SELF, J. T. & BOUCHARD, J. L., 1950.—“Parasites of the wild turkey, *Meleagris gallopavo intermedia* Sinnet, from the Wichita Mountains Wildlife Refuge.” 36 (5), 502–503.
- y. BAKER, G. A., 1950.—“*Trogloremia salmincola* in mink.” 36 (5), 503.
- z. RIEDEL, B. B., 1950.—“The artificial hatching of embryonated *Ascaridia galli* ova.” 36 (5), 503–504.

(198v) Tetraphyllidean plerocercoid larvae of the genus *Echeneibothrium* were found in considerable numbers in a nemertean, *Cerebratulus lacteus*, at the Duke University Marine Laboratory, Beaufort, N.C. R.T.L.

(198w) Ova of *Trichostrongylus* sp. presumed to be *T. colubriformis* were obtained from a native-born Missourian. Clinical and physical examinations were negative. There was an eosinophil count of 4%. Haemoglobin was 84%. R.T.L.

(198x) A collection of helminths made from *Meleagris gallopavo* by F. B. McMurtry at the Wichita Mountains Wildlife Refuge comprised *Metroliaesthes lucida*, *Echinoparyphium recurvatum* and *Zygocotyle lunata*. The last named is recorded from the turkey for the first time. R.T.L.

(198y) *Trogloremia salmincola* was present in four out of 13 ranch carcasses of Aleutian mink. The animals had been fed on salmon. The faeces of one out of ten other mink from the same ranch contained *T. salmincola* eggs. R.T.L.

(198z) It is easy to obtain a 15–25% hatching of *Ascaridia galli* ova by mixing them with a water paste of silicon carbide. The mixture is placed in a membrane made from the small end of a toy rubber balloon and the open end closed by twisting. The mass is rolled between the fingers then flushed into a glass cylinder, shaken and allowed to settle. The supernatant fluid is centrifuged to concentrate the larvae and ova. Silicon grit sizes ranging from 100–200 were the most satisfactory. R.T.L.

199—Journal of the Royal Egyptian Medical Association.

- a. ERFAN, M., 1950.—“Bilharzia ova in the sputum.” 33 (1), 97–99.
- b. HALAWANI, A. & DAWOOD, M. M., 1950.—“Recent advances in the treatment of bilharziasis. Part I.” 33 (2), 171–180.
- c. HALAWANI, A. & DAWOOD, M. M., 1950.—“Recent advances in the treatment of bilharziasis. Part II. Miracil D.” 33 (5), 463–480.

(199a) Although frequently present in the lungs, Bilharzia eggs have seldom been found in the sputum. This is partly because the sputum is not usually digested before examination. A case is cited in which diagnosis was made when the sputum of 24 hours was mixed with an equal quantity of 4% KOH, kept for an hour for digestion, and centrifuged for microscopical examination. R.T.L.

(199b) In the treatment of Egyptian patients suffering from bilharziasis, Halawani & Dawood do not recommend the two-day intensive course of foudadin or tartar emetic. Only 10% of the patients seeking treatment can tolerate this method. They classify patients under four grades. In grade I they place those who are physically fit; these may be able to tolerate the five-day or ten-day tartar emetic course, or the four-day foudadin course. Grade II contains those who conform to grade I except that the return of the pulse to normal after exercise is slower. These patients can tolerate the ten-day foudadin course. Grade III comprises those with compensated valvular heart disease and unimpaired kidney excretion. These cases and pregnant women should receive the original foudadin course, i.e. an injection every other day in the in-patient department. Grade IV is reserved for those

with nephritis, heart failure, jaundice, fevers or rise of temperature from any cause, for whom antimony treatment is contra-indicated. R.T.L.

(199c) Halawani & Dawood summarize earlier publications on the use, mode of action and toxicity of miracid-D in bilharzial infections. Their own experience is that in heavy infections with *Schistosoma haematobium* in young patients this drug must be given in an adequate dosage, i.e. 22 mg. per kg. body-weight once daily for 12 days, to achieve an apparent cure rate above 90%. Vomiting, colic and giddiness can be counteracted by small doses of belladonna. For severe toxic effects, they recommend concentrated glucose solution (20%) intravenously together with coramine. Calcium injections were a success in angioneurotic oedema. Intensity of infection and rate of drug excretion must be taken into consideration in estimating the effective dose of the drug. It is advisable to withhold treatment from cases unsuitable for antimony treatment and those with disease of the gall-bladder. R.T.L.

200—Journal of the Royal Faculty of Medicine of Iraq.

- a. WATSON, J. M., 1950.—“Studies on bilharziasis in Iraq. Part IV. The national anti-Bilharzia campaign.” 14, 25-37.

(200a) An account is given of the organization and work of the Bilharzia Section of the Directorate General of Public Health in Iraq. Surveys already made reveal that in the northern area schistosomiasis is practically absent save for a few isolated and unimportant foci in the south of Mosul and Kirkuk liwas. In the southern area it is absent south of Basrah but in that city there is a 26% incidence which increases northwards to reach 75% in Qurnah and Madainah. Apparently it is absent on the left bank of the Shatt al Arab in Abadan. The Amarah liwa has a mean incidence of 67% while in the Muntafik liwa it is 47%. In Diwaniyah liwa some districts are relatively free and others are heavily infected. The mean incidence is about 26%. At Tel Mohammed in the central area the incidence is 80%. In Baghdad liwa it is 35% and in the city of Baghdad 27% of the male and 15% of the female population are infected. In Kut liwa the mean incidence is 48%. The incidence decreases towards Iran and increases to the south. In Diyalah liwa in the region surrounding Baqubah it is 28% but in some villages, e.g. Khan Beni Saad it rises to over 60%. In Hillah liwa it ranges from 50% in the Hashmiah district to 5% in Hillah town. In Kerbelah liwa the mean incidence is 28% ranging from 18% in Najef and Kufa to 48% in Shifatha. At Felujah and Rumadi in the Dulaim liwa it is 36%. There are heavily infected foci on the banks of the Euphrates to the Syrian border but the infection is absent from the country bordering the upper reaches of the Tigris and the greater and lesser Zab rivers. The vector *Bulinus truncatus* is very scarce from December to May inclusive and very abundant from June to November. During the summer months a large part of the agricultural land in central and southern Iraq is irrigated by pumps and other water raising devices, but only deep pools and large canals, drains and culvert heads become permanent breeding foci. The molluscs appear to be absent from the Tigris and Euphrates rivers. Anti-snail measures carried out by the Bilharzia Section consist of clearance of vegetation from channels, drains, small pools and swamps followed by the application of copper sulphate. In Iraq drying of the canals promises to be an effective method of snail control owing to the relatively low humidity. In southern Iraq, notably in the Muntafik liwa a dermatitis caused by cercaria of undetermined non-human origin seriously interferes with agricultural activities. R.T.L.

201—Journal of the Royal Sanitary Institute.

- a. GREATOREX, J. C., 1950.—“A scientific approach to meat inspection.” 70 (4), 362-369. [Discussion pp. 369-372.]

(201a) In this general review of meat inspection from the scientific point of view, Greatorex mentions that meat inspectors in nearly all the larger abattoirs of Britain have

noted a steady increase in *Cysticercus bovis* in cattle. In 1949, the incidence at Birkenhead was 0.3%, at Birmingham 0.309%, at Cardiff 0.086%, at London 0.25% and at Manchester 0.15%. The condemnation of infected organs and carcasses should be accompanied by some effort to trace the infection to the human population who contaminated the pastures. The work of the meat inspector should be correlated also with the field veterinary officer in an attempt to locate centres of infection with fascioliasis, parasitic gastro-enteritis and parasitic bronchitis. Correlation of abattoir findings with field control would raise meat inspection from its present position of a monotonous routine to that of a scientific application of available knowledge.

R.T.L.

202—Journal of the South African Veterinary Medical Association.

- a. STEPHAN, S. A. R., TURNER, S. G. & PAINTER, R. A., 1950.—“The occurrence of the ‘kidney worm’ of swine (*Stephanurus dentatus*, Diesing 1839) in Natal.” 21 (3), 100–102.

(202a) Six cases of infection with *Stephanurus dentatus* occurred in pigs in the Highflats area of the Ixopo District of Natal. Many cysts containing the worms were present in the fat surrounding the kidneys and in the vicinity of the ureters. Although this is the first record of the occurrence of this species in the Union of South Africa the authors believe that owing to the prevailing methods of dressing carcasses in abattoirs it is probable that it has previously been missed.

R.T.L.

203—Journal of the South Carolina Medical Association.

- a. JUNIPER, Jr., K., 1950.—“Ascariasis and the respiratory tract (tropical eosinophilia).” 46 (5), 145–150.

204—Journal of the Tennessee Academy of Science.

- a. BYRD, E. E., 1950.—“Studies on the reproductive capabilities of the trematode egg.” [Abstract of paper presented at 11th Annual Meeting of the Association of Southeastern Biologists, Charlottesville, Va., April 7–8, 1950.] 25 (3), 227.
- b. WARD, H. L., 1950.—“Acanthocephala as possible parasites of Tennessee chickens.” 25 (3), 242–243.

(204a) Eggs of Reniferinae hatched only after ingestion by species of Physidae. The snails began to shed cercariae 20–77 days after infection. The number of cercariae discharged ranged from 20 to 2,861 over a period of 6–160 days. A single mother sporocyst may give rise to as many as 45 daughter sporocysts. No evidence was obtained that trematode infections shortened the life of experimentally infected snails.

R.T.L.

(204b) *Mediorhynchus gallinarum* has been reported in chickens once in India and once in the Philippines, and *Plagiorhynchus formosus* on two occasions only in the U.S.A., although both are common there in native wild birds.

R.T.L.

205—Journal of Wildlife Management.

- a. RAUSCH, R., 1950.—“Observations on histopathological changes associated with starvation in Wisconsin deer.” 14 (2), 156–161.

(205a) Heavy losses in deer in the U.S.A. occur in winter. Five starving deer collected in Jackson County, Wisconsin showed infection of *Protostrongylus* sp., but there was no evidence of verminous pneumonia and Rausch is of opinion that the winter losses in Wisconsin are caused directly by starvation.

R.T.L.

206—Leaflet. Ministry of Agriculture, Northern Ireland.

- a. ANON., 1950.—“Gapes in chickens.” No. 52, 3 pp.
- b. ANON., 1950.—“Parasitic worm diseases.” No. 91, 7 pp.

207—M.S.C. Veterinarian. Michigan State College.

- a. KROHN, A. F., 1950.—“New record of a nematode in Michigan.” 10 (3), 129.

(207a) A heavy infestation with *Nematodirus helvetianus* is reported in a Hereford calf. Treatment with phenothiazine failed. This is the first occasion on which this species has been recorded from the North Central States. The animal was one of a group, some of which had been raised at Lake Odessa, Michigan and some brought from Texas. R.T.L.

208—Madras Veterinary College Annual.

- a. ALWAR, V. S., 1950.—“A note on schistosomes in India, with a review of the literature.” Year 1949-50, 8, pp. 30-35.
b. RANGANATHAN, 1950.—“An unusual site of *Spirocerca* tumour in a dog.” Year 1949-50, 8, pp. 82-83.

(208a) Although nine species of *Schistosoma* have been recorded in the literature as from India, only *S. nasalis*, *S. spindale*, *S. indicum*, *S. suis* and *S. nairi* have been definitely proved to occur in India. Alwar points out that although on several occasions *S. haematobium*, *S. japonicum* and *S. bovis* are reported, the genera of known vectors of these species are absent from India. *Ornithobilharzia bomfordi* is presumed to be a case of mistaken identity as it has not been found again since it was named by Montgomery in 1906. R.T.L.

(208b) Ranganathan has found in a dog a large elongated *Spirocerca* about two inches anterior to the cardiac end of the oesophagus with a worm in the lumen and a small fibrosed nodule about the size of a tamarind seed in the lesser curvature of the stomach. He has seen only two such cases with tumours in the stomach wall during the past two years. R.T.L.

209—Manufacturing Chemist. London.

- a. SEIDEN, R., 1950.—“Modern anthelmintics for farm animals and poultry.” 21 (7), 279-283.

(209a) The more recently introduced anthelmintics for the treatment of farm animals are: (i) barium antimonyl tartrate, a rarely used preparation; (ii) carbon disulphide, to which the addition of aluminium stearate is a great advantage as this changes it into a jelly-like mass less irritating to the gastric mucosa and prolongs its action; (iii) Compound G-4, a trade name for a chlorinated phenol highly effective against tapeworms in dogs, cattle and sheep; (iv) a more concentrated form of copper and nicotine sulphate known as Whitlock's Cu-Nic for *Haemonchus contortus* in cattle and sheep—if preceded 30 days earlier by phenothiazine or tetrachlorethylene practically all the common gastro-intestinal parasites are removed; (v) hexachlorethane (known also as carbon trichloride, carbon hexachloride and perchlorethane), effective against liver-fluke and *H. contortus*; (vi) lead arsenate, one of the few agents effective against tapeworms in ruminants—it may be combined with twice its amount of copper sulphate in tablet or capsule for the simultaneous treatment of tapeworms and roundworms; (vii) nicotine sulphate which can safely be given in effective doses to poultry infected with large roundworms [*Ascaridia* sp.] but should not be administered to birds with empty crops; (viii) normal butyl chloride, highly effective against *Strongylus* spp. and *Trichonema* spp. in horses, and in capsule form is an almost ideal vermicide for pet animals with whipworms, hookworms and roundworms; (ix) phenothiazine, which has almost revolutionized the treatment of worm-infected farm animals; (x) phenothiazine-nicotine, which will remove 99% of the roundworms and caecal worms of poultry, given in a medicated mash on three successive days at 3-week intervals; (xi) sodium fluoride, now accepted as a simple and inexpensive mass treatment of *Ascaris* in pigs; (xii) tetrachlorethylene, which has a lower toxicity than carbon tetrachloride and is still used as a one-dose treatment for ruminants with hookworms, stomach worms and *Cooperia* spp., for pigs and for birds with the large roundworms and intestinal

flukes. Seiden gives the dosage and method of administration under each of the anthelmintics listed.

R.T.L.

210—Medicina Colonial. Madrid.

- a. APARICIO GARRIDO, J. & PRIETO LORENZO, A., 1950.—"Estudios sobre anquilostomiasis (nota previa). Existencia de un importante foco." 15 (4), 323-329.
- b. HERRERO, M. T., 1950.—"Hetrazán : un nuevo compuesto para el tratamiento de la filariasis." 15 (4), 356-364.

(210a) *Ancylostoma duodenale* was found to be prevalent in the village of San Fernando de Henares, Madrid. Some of the cases were severe. It is considered that the focus is a new one, having a connection with the infection in the neighbouring village of Mejorada del Campo.

E.M.S.

211—Medizinische Klinik.

- a. STRAUSS, H., 1950.—"Subileus durch Oxyurenbefall." 45 (11), 340-341.
- b. BOEHNCKE, H., 1950.—"Ist der Nachweis von Trichocephaluseiern im Stuhl belanglos?" 45 (14), 436-438.

(211b) Boehncke describes a series of nine cases where *Trichuris* ova were recovered from children and in which the infection was associated with abdominal pain, eosinophilia, symptoms of tuberculosis of the ileo-caecal glands or of appendicitis. In seven of the children both ova and symptoms disappeared after treatment with "Spirocid".

A.E.F.

212—Mémoires de l'Institut Royal Colonial Belge. Section des Sciences Naturelles et Médicales.

- a. BOUILLON, A., 1950.—"Bibliographie des schistosomes et des schistosomiasis (bilharzioses) humaines et animales de 1931 à 1948." 18 (5), 141 pp.

(212a) Bouillon has continued Khalil's Bibliography of Schistosomiasis, published in 1931, and has covered the literature from 1931-1948. Sixty-three references prior to 1931 not mentioned by Khalil and 29 belonging to 1949 are incorporated, bringing the number of titles cited to 1,980. The main list is arranged under authors and is followed by a supplementary list of 101 titles which includes 48 belonging to 1949. A subject index and one of geographical distribution are added.

R.T.L.

213—Memorias do Instituto Oswaldo Cruz.

- a. FREITAS, J. F. TEIXEIRA DE & MACHADO DE MENDONÇA, J., 1950.—"Novo trichostrongilídeo parasito de *Chauna torquata* (Oken) (Nematoda)." Año 1949, 47 (1/2), 27-30. [Also in French pp. 31-34.]
- b. LOBATO PARAENSE, W. & MALHEIROS SANTOS, J., 1950.—"O sexo do *Schistosoma mansoni* nas infestações produzidas por cercárias de um único molusco." Año 1949, 47 (1/2), 35-49. [Also in English pp. 51-62.]

(213a) A trichostrongyle in *Chauna torquata* from the Zoological Gardens, Rio de Janeiro, resembling *Strongylus anulatus* Molin, 1860 (renamed *S. nigricinctus* by Railliet, 1898 as the specific name *anulatus* was preoccupied) is described as *Paramidostomum pulchrum* n.g., n.sp. The new genus, which has a buccal capsule, also resembles *Amidostomum* in the characters of the bursa, but there are no teeth in the buccal capsule, the dorsal ray is not deeply divided and the spicules are slender and filiform.

R.T.L.

(213b) Each of 53 laboratory animals (2 rabbits, 3 guinea-pigs, 12 rats and 36 mice) was injected with *Schistosoma mansoni* cercariae obtained from a single snail. Male schistosomes developed in 17, females in 14 and both sexes in 6; in 9 the sex could not be determined and in 7 no parasites were found. In 5 of the animals, a second inoculation

was made seven days after the first, with cercariae from the same snails. That female schistosomes do not attain sexual maturity in the absence of males was confirmed. In bisexual infections, maturity is reached within 30-40 days. The worms, whether males or females, found in unisexual infections showed great diversity of size. The number of schistosomes decreased rapidly with the length of infection. Rats were less suitable experimental hosts than mice. Rabbits and guinea-pigs tolerated large numbers of adults in their portal system. No congenital infection occurred in animals inoculated when in a more or less advanced stage of pregnancy. This is ascribed to the inability of the schistosomula to penetrate the placenta owing to the exhaustion of their histolytic products. R.T.L.

214—Military Surgeon.

- a. BLOUNT, R. E., 1950.—“Massive hookworm infestation following a single exposure.” 106 (6), 449-452.

(214a) After wading in a polluted stream leading into Tokyo Bay, an American youth developed innumerable purplish maculae about 1 mm. in diameter. These, which itched intolerably, persisted for about 10 days. There was sore throat, pain on swallowing, and difficulty in breathing by the sixth day, but so far no eosinophilia. On the 34th day there was epigastric discomfort, vomiting and diarrhoea with black stools. On the 35th day the eosinophilia was 19% ; six to eight diarrhoeal stools were passed daily. On the 55th day ova and innumerable red blood corpuscles appeared in the faeces. The ova were identified as those of *Ancylostoma duodenale*. Eight courses of anthelmintics over a period of 12 months were required to render the faeces negative for ova. Eosinophilia was still 12% after 15 months. R.T.L.

215—Nature. London.

- a. LAL, M. B. & CHOWDHURY, N. K., 1950.—“Anticoagulant activity of the Indian cattle leech.” [Correspondence.] 166 (4220), 480.
b. LAZARUS, M. & ROGERS, W. P., 1950.—“Uptake of phenothiazine labelled with sulphur-35 by the tissues of nematode parasites and their hosts.” [Correspondence.] 166 (4224), 647-648.

(215a) A fresh extract was obtained by pounding with pure quartz sand in a mortar the first eight segments of the common Indian cattle leech, *Hirudinaria* sp. ; the solution was filtered through a cotton plug, freed from protein and buffered to pH 7.2 with the Sørensen phosphate buffer. The coagulation time with human and other mammalian blood *in vitro* and in mice *in vivo* was much prolonged, and no haemolysis occurred. The anticoagulant property was retained for three weeks when the extract was stored at room temperature with a maximum range of 95°F. to 100°F. It was also absolutely non-toxic when given to white mice intravenously, intramuscularly or by the mouth. This extract acts as an efficient anticoagulant both by intravenous and oral routes, whereas heparin is only effective intravenously and dicumarol only orally. R.T.L.

(215b) Lazarus & Rogers found that the uptake of sulphur-35-labelled phenothiazine by *Ascaridia galli*, *Nippostrongylus muris* and *Haemonchus contortus* was most rapid at pH 6.0 and in the presence of a wetting agent. Ligaturing *A. galli* did not appreciably reduce the rate of drug uptake. *In vivo* the uptake of phenothiazine by *A. galli* and *N. muris* was about five times as fast as *in vitro*, reaching a level of 1.5-2.5 mg./g. dry weight about three hours after dosing. The uptake of the drug by the parasites was very much greater than the uptake by the tissues of the host animals. The amount of phenothiazine found in *A. galli* which had been expelled from the host by the action of the drug varied from 1.6-3.3 mg./g. dry weight. Both *A. galli* and *N. muris* which had been exposed to phenothiazine *in vivo* retained a large proportion of the drug when they were incubated in phenothiazine-free saline *in vitro*. W.P.R.

216—New Zealand Journal of Agriculture.

- a. THOMPSON, J. J., 1950.—"Methods of controlling poultry parasites." 81 (2), 155, 157, 159, 161-162.

(216a) Heavy worm infections in poultry are due to a combination of several factors, viz. (i) damp areas in houses or pasture, (ii) long grass or weeds on pasture, (iii) overcrowding in houses and on pasture, (iv) running the young birds with old birds, and (v) poor feeding. Adequate protein and vitamin A are important in building up resistance to parasitism.

R.T.L.

217—North American Veterinarian.

- a. GREEN, J. E., 1950.—"Preparation for worming." [Questions & Answers.] 31 (10), 678.

218—Parasitology.

- a. STAMMERS, F. M. G., 1950.—"Observations on the behaviour of land-leeches (genus *Haemadipsa*)." 40 (3/4), 237-246.
 b. REES, G., 1950.—"The plerocercoid larva of *Grillotia heptanchi* (Vaulleuard)." 40 (3/4), 265-272.
 c. TETLEY, J. H., 1950.—"The differentiation of the eggs of *Haemonchus contortus* and *Ostertagia* species of the sheep and a note on the relative generic egg-laying rates." 40 (3/4), 273-275.
 d. CROWCROFT, P., 1950.—"Note on *Lintonium vibex* (Linton, 1899) (Digenea—Trematoda)." 40 (3/4), 316-321.

(218a) Laboratory studies with *Haemadipsa zeylanica* from the Burmese-Indian border and from around Ratnapura in Ceylon show that the bite of this leech injects two substances into the tissues, namely, a hirudin-like substance, and a histamine-like substance which causes capillary paralysis. No effective method of shortening the bleeding time was found but fused alum applied in the form of a pencil was a most useful precipitant and was effective if the resulting surface clot was not disturbed. Hydroxycitronellal proved to be an effective but expensive repellent. Di-methyl phthalate repelled mosquitoes as well as leeches. Both chemicals gave good protection in the jungle. A satisfactory cream was prepared consisting of 25 parts of di-methyl phthalate, 18 parts of white wax and 57 parts of arachis oil. A light application to the footwear and to the skin of the legs as far as the knee sufficed to prevent attack.

R.T.L.

(218b) A detailed description is given of the plerocercoid larva of *Grillotia heptanchi* taken from the right supra-orbital lateral line canal of a specimen of *Merluccius merluccius* which was probably caught off the west coast of Britain. This is a new host record. R.T.L.

(218c) Finding a ram heavily infected with *Haemonchus contortus*, *Ostertagia* spp. and *Cooperia curticei*, but harboring very small numbers of other nematodes, Tetley has recovered eggs from the faeces by centrifugal flotation and has measured the length and width of 290 eggs taken at random. Arbitrarily separating the eggs of the three genera on the basis of earlier measurements, he has used the data to determine the mean length and width of *Haemonchus* and *Ostertagia* eggs, their standard deviations, and statistical ranges (means ± 2 s.d.). In a graphical plot the ranges are used as semi-axes of ellipses theoretically containing 91.2% of each population. The means and standard deviations so found are, for *H. contortus*, $76.43 \pm 3.94\mu \times 45.98 \pm 2.57\mu$, and for *Ostertagia* spp., $92.76 \pm 4.94\mu \times 49.02 \pm 1.62\mu$. The wide dispersion of *Ostertagia* lengths is probably due to the presence of two species. On the basis of worm counts, one female *Haemonchus* lays 15.5 times as many eggs per day as one female *Ostertagia*.

B.G.P.

(218d) Specimens of *Lintonium vibex*, collected from *Cantherhines setosus* and *C. güntheri* taken from the coastal waters of southern Tasmania, are described and compared with the descriptions of Stunkard & Nigrelli (1930) of material collected from *Sphaeroides maculatus* at Woods Hole, Mass. The species *Gastris consors* Lühe, 1906 becomes *Lintonium consors* as the name *Gastris* is preoccupied.

R.T.L.

219—Pastoral Review. Melbourne.

- a. FETHERS, G., 1950.—"Worms in foals." 60 (4), 343.

220—Phytopathology.

- a. BAINES, R. C. & THORNE, G., 1950.—"Olive, a new host for the citrus-root nematode." [Abstract of paper presented at the 32nd Annual Meeting of the Pacific Division of the American Phytopathological Society, Salt Lake City, June 21-23, 1950.] 40 (10), 963.

(220a) Baines & Thorne have proved by cross inoculation experiments that the citrus root nematode, *Tylenchulus semi-penetrans*, can infest the roots of olive and is morphologically identical on both hosts. T.G.

221—Plant Disease Reporter.

- a. JENKINS, W. A., 1950.—"Root rot disease-complex causing tobacco plant bed failures in Pittsylvania County, Virginia." 34 (6), 177-178.
 b. FENNE, S. B., HENDERSON, R. G., SMITH, T. J. & WHITE, W. C., 1950.—"Alfalfa-clover disease survey in Virginia." 34 (7), 204-205.
 c. ALLISON, J. L., 1950.—"Pasture and forage legume and grass diseases in North Carolina in 1949." 34 (7), 205.

(221a) Jenkins describes losses associated with root lesions showing varying degrees of discoloration from cream to dark brown and root blindness, occurring in tobacco seed beds whilst the seedlings are still young. Nematodes found associated with such lesions in tobacco and sweet clover were determined by Steiner as species belonging to the genera *Panagrolaimus* and *Chiloplacus*. T.G.

(221b) Fenne *et al.* report further on an infestation of stem eelworm (*Ditylenchus* spp.) found in alfalfa on a farm in Henrico County, Virginia in 1948. Twenty different selections and varieties of alfalfa were sown, and when examined in April 1950 two selections obtained from Dr. Oliver Smith, designated 77-48 and 77-97, looked promising, whereas most of the others showed loss of stand due to the combined attacks of fungi and nematodes. T.G.

(221c) Allison found root-knot nematode (*Meloidogyne* sp.) causing injury to Ladino clover in localized areas during the summer months. Affected plants withered and died during the dry weather. The stem nematode was also found infesting alfalfa in Harnett County. T.G.

222—Plant Disease Reporter. Supplement.

- a. JOHNSON, H. W., 1950.—"Plant disease research on forage crops in the Bureau of Plant Industry, Soils, and Agricultural Engineering." No. 191, pp. 42-59.
 b. McCUBBIN, W. A., 1950.—"Plant pathology in relation to Federal domestic plant quarantines." No. 191, pp. 67-91.
 c. ANON., 1950.—"Nation-wide results with fungicides in 1949. Fifth annual report. Results with ornamental crops, turf, shade trees and shrubs." No. 192, pp. 169-176.
 d. ANON., 1950.—"Nation-wide results with fungicides in 1949. Fifth annual report. Results with soil fumigation and drench tests." No. 192, pp. 178-179.
 e. NANCE, N. W., 1950.—"Some new or noteworthy plant disease records and outstanding developments in the United States in 1949." No. 194, pp. 363-380.

(222a) In reviewing investigations carried out on forage crops over a period of 24 years, Johnson deals with work on alfalfa diseases and pests and mentions attacks by the stem eelworm, *Ditylenchus dipsaci*. Certain strains of alfalfa imported from Turkestan show some power of resistance to attack and one of these under the name of "Nemastan" has been released for growth in nematode-infested areas. T.G.

(222b) McCubbin discusses the relationship of Federal plant quarantines and attendant regulatory measures to the problem of plant pests and diseases in the U.S.A. Under the heading "Miscellaneous Disease Problems" he discusses eight plant disease problems which have had to be dealt with by quarantine regulations. Two of these are due to eelworms, namely the bulb nematode, *Ditylenchus dipsaci*, and the golden nematode, *Heterodera rostochiensis*. T.G.

(222c) In a short paragraph on foliar nematode of chrysanthemum, nearly perfect control is said to be given with 25% wettable parathion at two centres. 20% parathion emulsion was less effective, and chlordane at 4 lb. per 100 gal. gave fair control but left an objectionable residue. Practical control was not obtained with TEPP [tetraethyl pyrophosphate], Lindane [gammexane] or Black Leaf 40. M.T.F.

(222d) This is one section of the "Nation-wide results with fungicides in 1949: 5th annual report", an incomplete summary which does not "represent final conclusions or imply recommendations". The section briefly summarizes tests in Connecticut, Carolina, Florida and New York, mainly dealing with ethylene dibromide, methyl bromide, chloropicrin and D-D mixture against the meadow and root-knot eelworms. In New York D-D mixture was used at 300, 400, 450 and 500 lb. per acre and 40% ethylene dibromide at 180, 220 and 260 lb. per acre against stem eelworm in onions, in the autumn before spring sowing. Ethylene dibromide failed to control; the higher dosages of D-D controlled best, but were more phytotoxic than the 300-lb. dosage. In South Carolina and Florida soil fumigants were found to impair the quality of tobacco while increasing the yield. B.G.P.

223—Poultry Science.

- a. RIEDEL, B. B., 1950.—"The effect of caricide on *Ascaridia galli* in chickens." 29 (3), 394-397.
- b. RIEDEL, B. B. & ACKERT, J. E., 1950.—"The resistance of chickens to ascarids as affected by protein supplements of soybean oil meal and skim milk." 29 (3), 437-443.

(223a) Riedel finds that caricide is not very useful as an anthelmintic for chickens infested with *Ascaridia galli*. It has a low level of efficiency and is also very toxic. There are changes in the kidneys and pancreas and the whole body becomes dehydrated. P.A.C.

(223b) Riedel & Ackert show that a basal cereal ration supplemented with soyabean meal and skim milk leads in chickens to a high degree of resistance to infestation with *Ascaridia galli*. Such a supplement is as effective as one containing animal protein made from scrap meat. P.A.C.

224—Press Bulletin. New Mexico Agricultural Experiment Station.

- a. LEDING, A. R., 1950.—"Control of root-knot nematodes on cotton in New Mexico." No. 1036, 11 pp.

(224a) Root-knot nematodes were found to be causing considerable damage to cotton at the U.S. Cotton Field Station in New Mexico. Soil fumigation experiments were made using Dowfume W-40 at $7\frac{1}{2}$ and 10 gallons per acre and Dowfume N at 10 and 15 gallons per acre. The fumigants were applied in strips about 8 in. deep and 4 in. on each side of the seed bed: the plots were then irrigated to seal the surface. Eight days later the ground was disced and cotton planted. The yields of cotton from all treated plots except those treated with Dowfume N at 15 gallons were significantly higher than those from the untreated. At the end of the season the roots were examined and were all found to be galled, but the galling was four times as severe on plants from the untreated plots as on any of the others. Further experiments are to be made but it is concluded that satisfactory control may be achieved by soil fumigation. M.T.F.

225—Proceedings of the Helminthological Society of Washington.

- a. KATES, K. C., 1950.—"Survival on pasture of free-living stages of some common gastrointestinal nematodes of sheep." 17 (2), 39-58.
- b. ALLEN, R. W., 1950.—"Relative susceptibility of various species of earthworms to the larvae of *Capillaria annulata* (Molin, 1858) Cram, 1926." 17 (2), 58-64.
- c. HANSON, M. L., 1950.—"Some digenetic trematodes of marine fishes of Bermuda." 17 (2), 74-89.
- d. HARRINGTON, R. F., SPINDLER, L. A. & HILL, C. H., 1950.—"Freedom from viable trichinae of pork products prepared to be eaten without cooking under Federal meat inspection." 17 (2), 90-91.
- e. JOYEUX, C. & BAER, J. G., 1950.—"The status of the cestode genus *Meggittiella* Lopez-Neyra, 1942." 17 (2), 91-95.
- f. KUNTZ, R. E. & STIREWALT, M. A., 1950.—"Laboratory evaluation of two dinitro-phenols as molluscicides." 17 (2), 95-102.
- g. LUCKER, J. T., 1950.—"The occurrence of a gubernaculum in *Thelazia californiensis* Price, 1930 (Nematoda: Thelaziidae)." 17 (2), 119-122.
- h. MANTER, H. W. & CROWCROFT, P. W., 1950.—"A new genus of amphistome (Trematoda) from a Tasmanian marine fish." 17 (2), 122-126.
- i. RISER, N. W., 1950.—"Notes on toto-mount technique." 17 (2), 132-133.

(225a) As relatively few studies on the survival on pastures of the free-living stages of gastro-intestinal helminths of sheep have been conducted throughout an entire year, or the pastures tested at short intervals for viable larvae by using parasite-free lambs, Kates has made six experiments to study the effects of varying weather conditions throughout an entire year. The results based on these experiments and on previously published observations are tabulated. *Oesophagostomum* and *Haemonchus* showed good development and survival only when the weather was continuously warm and moist. The free-living stages on pasture of *Cooperia* and *Trichostrongylus* are slightly more resistant. *Ostertagia* is highly resistant to cold weather and survives the winter in Maryland, but has low resistance to drought and high temperature. *Nematodirus* is the most resistant to climatic conditions throughout the year. With the possible exception of *Oesophagostomum*, considerable numbers of larvae survive high temperatures for 3 to 3½ months in spring and summer unless there is drought. Infected pastures, if rested over the winter in regions with sub-freezing temperatures, are likely to be almost free from viable larvae of *Oesophagostomum*, *Haemonchus*, *Cooperia*, *Trichostrongylus* and probably those of *Chabertia* and *Bunostomum*. The larvae of *Ostertagia* and *Nematodirus* are not thereby markedly reduced. The most injurious effects are periods of drought and high temperatures in summer.

R.T.L.

(225b) Experiments are detailed which show that *Lumbricus terrestris* is the most efficient intermediate host of *Capillaria annulata*. Of the other species and varieties used *Allobophora caliginosa trapezoides*, *A. caliginosa typica* and *Eisenia foetida* showed, in this order, a decreasing susceptibility. *A. longa* proved refractory in the few trials made. This is the first occasion on which *L. terrestris* has been reported as a vector of *C. annulata*.

R.T.L.

(225c) Of the thirty-two species of digenetic trematodes collected at the Bermuda Biological Station from marine fishes, three are new, namely *Dollfustrema macracanthum* n.sp. from *Gymnothorax moringa*, *Lepidapedon trachinoti* n.sp. from *Trachinotus* sp.inq. and *Pseudopecoelus barkeri* n.sp. from *Holocentrus ascensionis*(?). These bring the total number of known species in Bermuda marine fishes to 43. A key to the twelve species of *Lepidapedon* is provided; *L. coelorhynchi*, *L. sebastisci* and *L. gadi* are made synonyms of *L. elongatum*. *Prosorhynchus atlanticus* becomes a synonym of *P. pacificus*. *Echinostephanus elongatus* is referred to the genus *Stephanostomum*, and *Distomum subtenue* (= *Proctoeces erythraeus*) becomes *Proctoeces subtenue* n.comb. *Distomum tomex* (= *Atalostrophion epinepheli*) becomes *Atalostrophion tomex* n.comb.

R.T.L.

(225d) Between March 1934 and August 1939, 3.32% of the 13,013 samples of pork muscle products collected from meat packing establishments contained trichina cysts, whereas of 3,171 samples collected between July 1948 and December 1949 only 0.82% contained trichinae. The largest numbers of trichinae per half pound of pork product were 2,400 in the first and 120 in the second series. Extremely few trichinae showed signs of life in either series. Living larvae failed to infect laboratory rats. This conclusively shows that the processing of pork as prescribed by the Federal Meat Inspection regulations is an effective safeguard.

R.T.L.

(225e) Joyeux & Baer criticize Lopez-Neyra's attempt [*Rev. ibér. Parasit.*, 1942, 2 (2/3), 113-256], to split *Hymenolepis* into smaller and well defined genera. *Diplomonorchis* and *Meggittiera* (lapsus for *Meggittiella*) lack descriptions and are consequently still-born. Examination of original material shows that *Hymenolepis multihamata* is a synonym of *Dilepis urceus* which is now transferred to *Paradilepis* of which *Meggittiella* is also a synonym. *Hymenolepis magniuncinata* is identified with *H. ficticia*, *H. childi* and *H. gyogonka* are synonyms of *H. cormoranti*, and *H. furcouterina* belongs to *Echinorhynchotaenia*. A key is given to the genus *Paradilepis* which now comprises six species.

R.T.L.

(225f) Dinitro-*o*-cyclohexylphenol (DCHP) is lethal within 24 hours to *Australorbis glabratus* and *Bulinus contortus* at 2 and 3 p.p.m. respectively. It is slightly toxic to mammals, aquatic plants and to some aquatic invertebrates. It is very persistent and is not affected by water with a high organic content. Its dicyclohexylamine salt (K604) also shows considerable promise, but is less consistent in action and more costly. Both chemicals are lethal to goldfish at the concentrations necessary to kill molluscs. They destroy cercariae of *Schistosoma mansoni* within a few hours at 1 to 2 p.p.m.

R.T.L.

(225g) In *Thelazia californiensis* there is an inconspicuous, discrete, sclerotized gubernaculum. Its absence in some specimens is possibly related to age. A pair of subterminal nervous organelles identifiable as phasmids are noted in addition to the three pairs of post-cloacal papillae.

R.T.L.

(225h) *Choanomyzus tasmaniae* n.g., n.sp. from the kelp fish, *Dactylosargus arctidens*, is an amphistome of peculiar interest in that the acetabulum possesses a dorsal or terminal pore as well as a ventral opening. Its family allocation is not clear but it is tentatively placed in Opistholebetidae, although it lacks seminal receptacle, pigment flecks and post-oral ring. The ovary is deeply 4-lobed. The excretory vesicle is Y-shaped. It has some resemblances to Fellodistomatidae.

R.T.L.

(225i) Small trematodes and cestodes stored in alcohol in cork-stoppered bottles are often spoilt by staining with extracts from the cork. This can be removed by transferring, after immersion in distilled water for 5-10 minutes, to pyridine for one-half to two hours. The pyridine is then washed out with many changes of distilled water. When the odour of this reagent is no longer discernible, the specimens are placed in 0.25% potassium permanganate for 20-60 minutes, washed thoroughly in distilled water and decolorized for 20-40 minutes in a mixture of equal parts of 1% oxalic acid and 1% sodium sulphite, followed by prolonged washing in distilled water. The specimens are then transferred to 70% alcohol for 24 hours prior to staining. As a staining solution in place of carmine for *in toto* mounts, a modification of the Coelestin blue B-lake method of Proescher, Zapata & McNaught (1946) is suggested.

R.T.L.

226—Records of the South Australian Museum.

- a. JOHNSTON, T. H. & MUIRHEAD, N. G., 1950.—“Some Australian caryophyllaeid cestodes.” 9 (3), 339-348.

(226a) Four species of caryophyllaeid cestodes have been collected from the Australian fresh-water silurid *Tandanus tandanus*. *Balanotaenia bancrofti* has already been described from eastern Queensland. The others are new: *Notolytocestus major* n.g.,

n.sp., *N. minor* n.sp. and *Biacetabulum tandani* n.sp. *Notolytocestus* n.g. belongs to Lytocestinae. It is differentiated from *Lytocestus* by the presence of a common genital pore, medullary ovarian lobes and a long uterus extending into the pre-ovarian area and from *Balanotaenia* in having an unspecialized scolex and an extension of the uterine coils beyond the cirrus. The cirrus opens in the utero-vaginal canal as in *Caryophyllaeides*. *N. minor* resembles *N. major* but mature egg-bearing specimens 6.5 mm. long are smaller than similar *N. major* specimens devoid of eggs. In *B. tandani* n.sp. the absence of neck region and well marked loculi, the smaller size of the body and the testes, vitellaria and cirrus sac distinguish it from other species. It is the first Caryophyllaeinae to be recorded from Australia.

R.T.L.

227—Recueil de Médecine Vétérinaire.

- a. PRIOUZEAU, M., 1950.—“Le problème de la phénothiazine.” 126 (6), 329–346.
- b. FONTENEAU, M., 1950.—“Localisations et fréquence de *Cysticercus bovis* en inspection des viandes dans le département de la Vendée.” 126 (6), 351–355.

(227a) Priouzeau critically reviews the experience of French veterinarians with phenothiazine and discourses on his own. Since 1942 he has treated nearly 3,000 bovines and 800 equines without serious effect. During the year 1947–48, 32 out of 50 veterinarians in the Vendée district treated about 10,000 bovines and 1,500 horses without loss. Failure was almost always due to the treatment of cases which showed no clinical symptoms of parasitism or were subject to other chronic affections.

R.T.L.

(227b) The masseters, which in 1941–42 appeared to be the seat of election of *Cysticercus bovis*, were in 1947–48 rarely infected whereas the heart in which formerly it was seldom seen became almost constantly so, together with the costal pleura along the line of the intercostal vessels and of the perivascular connective tissues of the axillary vessels. In a commercial abattoir [at Pouzauges] Fonteneau noticed an increase in number and extent of *Cysticercus* infections between 1943 and 1948. The number of condemned carcasses in the Department of Vendée was 18, in Finistère 11, in Loire-Inférieure 17, in Gironde 5, in Charente-Maritime 2, and one each in Deux-Sèvres, Vienne, Morbihan, Côtes-du-Nord and Landes. The reason for this increase is difficult to define: the hygienic conditions have not changed but the Army of Occupation may have been partly responsible for its introduction.

R.T.L.

228—Report of the Bilharzia Snail Destruction Section, Ministry of Public Health, Egypt.

- a. EGYPT, MINISTRY OF PUBLIC HEALTH, 1950.—“Annual report.” 6th (1947–48), 22 pp.

(228a) The Bilharzia Snail Destruction Section of the Egyptian Ministry of Public Health reports on its control work during 1947–48 in the provinces of Fayoum, Giza, Qena, Aswan, Qalyubiya, Beheira and Beni Suef, and in the oases Baharia, Kharga and Dakhla. Three maps and 17 statistical tables illuminate the text. In the Section's laboratory 338 samples of *Bulinus* and *Planorbis* containing 125,224 specimens from the Giza and Qalyubiya provinces were examined for schistosome infection: 22% of the samples and 0.7% of the snails were found to be infected. *Schistosoma mansoni* was higher and more frequent than *S. haematobium*. The action of Benoclor 3C, Aquacite and six derivatives of dinitro-phenol were under investigation as weed and snail killers.

R.T.L.

229—Report. Department of Scientific and Industrial Research, New Zealand.

- a. TETLEY, J. H., 1950.—“Nematode parasitism in sheep.” 24th (1949–50), pp. 109–111.

(229a) A brief outline is given of Tetley's research programme in progress in 1949–50. This covered (i) estimating the date on which parasites are acquired; (ii) process of elimination of parasites; (iii) “strain” and susceptibility to parasitism; (iv) the rôle of pregnant

ewes in lamb parasitism ; (v) seasonal nature of parasitism in sheep ; (vi) relative specific infectability ; (vii) the effect of the parasites on the host ; (viii) special purpose pastures and parasitism ; (ix) anthelmintics.

R.T.L.

230—Report of the Veterinary Department, Nigeria.

- a. UNSWORTH, K., 1950.—“ Sub-division of Parasitology.” Year 1948, pp. 71-74.

(230a) In some areas in Nigeria, helminth infections and malnutrition have caused considerable losses and retarded development of young stock and poultry. In cattle the helminth egg-count in the faeces increases substantially after the onset of the rainy season, and reaches its peak in August. Thereafter there is a rapid decline and the count remains at a low figure. In Bauchi and Misau 36 out of 151 faecal samples contained *Fasciola* eggs, while only 9 of 82 samples from Maiduguri, Potiskum, Biu and Bama, and four only of 32 samples from Zaria were positive. Faecal examination of 323 cattle showed 300 positive for parasites, including 139 with paramphistomes, 96 with trichostrongyles, 49 with *Fasciola*, 6 with *Ascaris*, and 1 each with *Bunostomum* and schistosomes.

R.T.L.

231—Revista de la Academia Colombiana de Ciencias Exactas, Físicas y Naturales.

- a. URIBE, C., 1950.—“ Contribución al estudio de algunos trematodos larvarios de Colombia.” 7 (28), 526-533.
 b. RENJIFO SALCEDO, S., 1950.—“ Contribuciones a la parasitología Colombiana. II.—Hemoparásitos de aves y otros vertebrados de los llanos orientales.” 7 (28), 539-547.
 c. RENJIFO-SALCEDO, S. & ORDUZ-DUARTE, A., 1950.—“ Dieciocho nuevos casos humanos, autóctonos, con *Mansonella ozzardi* en oriente de Colombia.” 7 (28), 548. [English summary p. 548.]

(231a) A number of cercariae (distinguished by number not by name) are described from Colombian Mollusca. *Cercaria* No. 9 occurred in *Planorbis pronus*, *Cercaria* No. 14 in *Tropicorbis philippianus*, *Cercaria* No. 23 and *Cercaria* No. 23A in *T. canonicus*, *Cercaria* No. 26 in *Limnaea bogotensis*, *Cercaria* No. 54 in *Pomacea reflexa*, and *Cercaria* No. 56 in *Hemisinus muzensis*.

R.T.L.

(231b) Renjifo Salcedo, in a table of blood parasites in birds and other vertebrates of the eastern plains of Colombia, lists 18 *Microfilaria* spp. from 13 hosts. [These, although not named or described, are illustrated by photomicrographs.]

R.T.L.

(231c) *Microfilariae* of *Mansonella ozzardi* occurred in 18 out of 93 Indians of indigenous tribes living in the region of San José de Ocné, Comisaría del Vichada, 4°09 north of Ecuador and 3°20 north of Bogotá. The measurements of 34 *microfilariae* are tabulated.

R.T.L.

232—Revista de la Asociación Médica Argentina.

- a. ORTIZ DE ZÁRATE, J. C., PARDAL, R. & MATERA, R. F., 1950.—“ Epilepsia sensitiva por cisticercosis solitaria parietal.” 64 (671/672), 65-67.
 b. BASÍLICO, M. V., 1950.—“ Tratamiento de la hidatidosis pulmonar.” 64 (671/672), 80-85.
 c. NOCITO, F. J. & ABELENDA, E. F., 1950.—“ Quiste hidatídico muscular primitivo.” 64 (671/672), 88-89.

233—Revista Chilena de Pediatría.

- a. RUBIO, S., 1950.—“ Triquinosis mortal en un niño.” 21 (1), 37-40. [English summary p. 39.]

234—Revista Cubana de Laboratorio Clínico.

- a. KOURÍ, P. & KOURÍ BARRETO, J., 1950.—“ Discusiones en torno al *Inermicapsifer cubensis* (Kourí, 1938).” 4 (2), 45-56.

(234a) [This paper has also appeared in *Rev. Kuba Med. trop. Parasit.*, 1950, 6 (1/2), 1-7. For abstract see *Helm. Abs.*, 19, No. 124a.]

235—Revista Ibérica de Parasitología.

- a. GONZÁLEZ CASTRO, J., 1950.—"Comentarios acerca de nuestra hipótesis sobre vehiculación helmintiana del virus de la poliomiéltis, con motivo de un trabajo de A. W. S. Thompson." 10 (4), 401-426. [English summary p. 424.]
- b. NÁJERA, L., 1950.—"Dispositivo para la concentración de huevos de helmintos en heces." 10 (4), 465-470.

(235a) In considering the theory that the virus of poliomyelitis can be transmitted by helminth parasites, González Castro points out various ways in which this may occur. The helminth may be merely a mechanical vector in which the virus is carried on the outside of the ova. The helminths may, however, be carriers in which the virus is actually incorporated within the developing embryo or outside the embryo but within the egg shell. P.A.C.

(235b) Nájera describes a method of concentrating helminth ova from a sample of faeces. After being washed in water, the material is shaken up in saline in a tall tube which tapers to a neck about 8 mm. in diameter, the total height being about 60 mm. The ova ascend this fluid and are caught on a cover-glass. By this means the ova are concentrated within a very small area. P.A.C.

236—Revista Kuba de Medicina Tropical y Parasitología.

- a. PÉREZ ARA, A., 1950.—"Filariasis del epidídimo. Reporte de una primera observación en Cuba." 6 (3/4), 40-45. [English summary p. 45.]
- b. HIRZEL PASTRANA, L. F., 1950.—"El caribe. Cómo extirparlo." 6 (3/4), 65-66.

(236b) [This paper is reprinted from *Rev. méd.-quirúrg. Oriente*, 1941, 2 (3), 153-154. For abstract see *Helm. Abs.*, 10, No. 302a.]

237—Revue du Paludisme et de Médecine Tropicale.

- a. LINDBERG, K., 1950.—"La draconculose en Asie, particulièrement en Moyen-Orient, avec liste des Cyclopidés recueillis dans des régions endémiques." 8 (71), 87-111.

(237a) The present and past history of dracontiasis in the Middle East is reviewed. An official reply from the Moscow Government is quoted to the effect that this infection has been liquidated throughout Russia, although in Lindberg's opinion this cannot yet apply to Russian Turkestan. The incidence in Persia and Arabia (Arabia Petra, the Yemen, Asir, the Hadramaut and the south and east coasts, Nejd and Hejaz) is discussed. The various regions are illustrated by four maps. The article contains a list of Cyclopidae found in the southern regions of Persia, where dracontiasis is or has been endemic, and concludes with a list of bibliographical references arranged under the various countries of the Middle East. R.T.L.

238—Riforma Medica.

- a. GRECO, G. & VALLECORSI, G., 1950.—"Cisti da echinococco multiple della milza. Intervento operatorio e studio anatomo-clinico." 64 (8), 209-213.

239—Rivista di Parassitologia.

- a. SAVI, P., 1950.—"Infestazione da *Brachylaemus suis* (Balozet, 1936) in suini della Provincia di Foggia." 11 (3), 167-170. [English & French summaries p. 169.]

(239a) *Brachylaemus suis*, not previously reported for Europe, is recorded from pigs at Puglia in the Italian province of Foggia. R.T.L.

240—Rivista di Zootecnia.

- a. MONTALTI, M., 1950.—"Le più comuni malattie parassitarie degli animali da cortile." 23 (3), 100-102; (4), 137-138.

241—Science.

- a. TIMM, R. W., 1950.—“Chemical composition of the vitelline membrane of *Ascaris lumbricoides* var. *suis*.” 112 (2902), 167-168.

(241a) Timm describes in detail the steps by which he has reached the conclusion that the vitelline membrane in the living egg of *Ascaris lumbricoides* var. *suis* is myricyl palmitate (beeswax). This wax does not differ materially in melting point, solubility and other characteristics from that obtained from the vitelline membrane of *Meloidogyne hapla*, *M. javanica*, *Parascaris equorum*, *Rhabditis strongyloides*, *Ditylenchus dipsaci* and *Strongyloides canis*.

R.T.L.

242—Sicilia Medica.

- a. VINCI, G., 1950.—“Cisti da echinococco a sede rara.” 7 (2), 51-54. [English & French summaries p. 54.]

243—South African Medical Journal.

- a. MARKS, J. H., 1950.—“Filariasis with testicular involvement. Report of a case.” 24 (11), 185-187.

244—Sveriges Utsädesförenings Tidskrift.

- a. BINGEFORS, S., 1950.—“Undersökningar över klövernematodens utbredning och förutsättningarna för resistensförädling av rödklöver i mellersta och norra Sverige. I & II.” 60 (2), 154-189; (3), 245-276. [English summary pp. 271-272.]

(244a) The distribution of the clover stem eelworm in Sweden, earlier thought to be mainly concentrated in the south and parts of central Sweden, has now been shown to be widespread throughout the whole of central Sweden and in large parts of Norrland. Two or three definite cases of dissemination by seed have been determined. Parts of a field not previously attacked are frequently infected through the nematodes being spread by the water which runs down slopes in the field. Spreading can also take place by means of soil and plant residues which, for example during cultivation or harvesting, are transferred from one part of a field to another or from field to field. Crop rotation influences in a very high degree the extent of nematode attack. Varietal differences in resistance have been studied in a large number of trials with local strains of red clover in various provinces and in many special trials at Ultuna. The bred strains, which in trials in south Sweden were characterized by good resistance to nematode attack, without exception exhibited this attribute in central Sweden but were not sufficiently winterhardy for this part of the country. In selection work at Ultuna, central Swedish local strains were used as the initial material. Extensive investigations have been conducted on the possibilities of using artificial infection for the purpose of breeding. A brief account is given of a method of infecting seedlings of red clover, and of some of the results obtained. Good agreement was obtained between field attack and laboratory susceptibility.

S.B.

245—Tidsskrift for Planteavl.

- a. BOVIEN, P., 1950.—“Plantesygdomme i Danmark 1947. 7. Skadedyr på landbrugsplanter. 8. Skadedyr på havebrugsplanter.” 53 (2), 212-223. [English summary pp. 230-234.]

(245a) Many serious attacks by the oat nematode (*Heterodera major*) have been found in Denmark. A systematic inspection in one district showed that infestation was present on 60 out of 70 farms. The degree of infestation of clover by stem eelworm (*Ditylenchus dipsaci*) was difficult to estimate, as the clover and lucerne crops had suffered severely during the winter. In one case celeriac was attacked by the root-knot nematode (*Heterodera marioni*).

S.B.

246—Tierzüchter.

- a. KREBS, K. G., 1950.—"Bekämpfung des Wurmbefalls unserer Haustiere mit Phenothiazin." 2 (9), 206-207.

(246a) Krebs briefly mentions the serious economic effects of helminth and coccidial infections in domestic animals and draws attention to the efficacy of phenothiazine in the treatment of these conditions. There are no details. A.E.F.

247—Tijdschrift voor Diergeneeskunde.

- a. DORSSSEN, C. A. v. & BERG, H. A. v. D., 1950.—"Overzicht der onderzoeken van het uit de praktijk ingezonden ziektemateriaal over het jaar 1949." 75 (8), 321-329.
 b. SWIERSTRA, D., 1950.—"Internationale aspecten van de veterinaire parasitologie." 75 (8), 336-338.
 c. TEUNISSEN, G. H. B., 1950.—"Caricide (hetrazan) als middel tegen rondwormen." 75 (13), 589-590.
 d. ANEMAET, J. P. W., 1950.—"Vleeskeuringservaringen in Frankrijk, met name te Parijs." 75 (13), 607-608.

(247a) Dorssen & Berg, in a report on the examination of pathological specimens submitted during the year 1949 to the Institute of Infectious Diseases, University of Utrecht, mention the following helminths: *Capillaria* sp. and a heavy infection with *Echinoparyphium parvum* in pigeons; *Echinostoma revolutum*, *Raillietina* sp., *Capillaria* sp. and *Acuaria* sp. in ducks; *Cysticercus pisiformis* prevalent in rabbits; *Cittotaenia* sp., lungworms and *Trichostrongylus retortaeformis* in hares. They observed that *Heterakis* was not always present in the caeca of turkeys affected with blackhead. P.L.ler.

(247b) Swierstra discusses briefly the international aspects of veterinary parasitology. He points out that parasites are widespread and seem to occur wherever conditions for their survival prevail. He refers to the absence of trichinelliasis in Australia, the practically complete or total eradication of the armed tapeworm of man and other tapeworm species in the Netherlands and the non-occurrence of trichinelliasis in recent years in that country. He mentions the suggestion that echinococcosis in Friesland was originally imported by the introduction of dogs from Iceland by whaling vessels. He notes that the recommendations submitted by the International Committee on Control of Parasitic Diseases at Zürich in 1938 have only been partially complied with, and were barely discussed at the London meeting in 1949, when Australia, Great Britain, Turkey, New Zealand, the Netherlands and Germany were represented. The meeting recommended that each member of the Commission should compile a list of the parasites occurring in his country and should investigate the best means of combatting them. Measures of control by means of legislation were submitted to the Quarantine Section of the Congress. The compilation of an index of therapeutic agents was discussed. As the Netherlands representative on this Committee, Swierstra appeals to Dutch veterinarians to keep him informed of problems associated with parasites. P.L.ler.

(247c) Teunissen reports on the efficiency of diethylcarbamazine (hetrazan or caricide) against *Toxocara canis* and *T. cati* in 15 young dogs and cats. Dogs and cats received 50 mg. per kg. body-weight. In most of the animals the worms were expelled within 24 hours and eggs disappeared from the faeces. Some worms were passed by the 12th hour following medication. No ill effects were observed. Two young cats which received four times the recommended dose became restless within half-an-hour and were less active; there was salivation and attempts at vomiting. An hour later they settled down in a corner and nothing further was observed except diarrhoea the next morning. The advantages of this anthelmintic are that the patients need not be starved prior to medication or be purged. P.L.ler.

(247d) At a meeting of directors of the Meat Inspection Services, Anemaet related his experiences during a visit to the abattoirs "La Villette" and "La Veaugirard" in Paris. He is reported as remarking, *inter alia*, that the heart and internal and external masseter muscles are not incised. According to him cysticerciasis is common in France. [The species of animals affected are not specified.] P.L.J.E.R.

248—Transactions of the Royal Society of Tropical Medicine and Hygiene.

- a. HAWKING, F., 1950.—"Some recent work on filariasis." 44 (2), 153-182; Addendum pp. 182-186. [Discussion pp. 187-192.]
- b. EL ZAHAWI, S. & OVANESSIAN, G., 1950.—"A tumour mass due to *Ascaris* larvae." 44 (2), 229-230.

(248a) Hawking finds that hetrazan rapidly destroys the microfilariae of *Litomosoides carinii*, of *Wuchereria bancrofti* and, apparently by an opsonin-like action, of *Onchocerca volvulus*. It does not kill many of the adults of *Litomosoides* or *Onchocerca*. On adult *W. bancrofti* its effect is still uncertain. It may have some prophylactic effect against infective larvae of *Litomosoides* but it does not affect the developing forms of *Dirofilaria repens* in mosquitoes or the immature forms of *Litomosoides* in cotton-rats. Even small doses cause violent allergic reactions in onchocerciasis. It appears to be valuable in the treatment of loaiasis. In *W. bancrofti* its chief promise lies, in Hawking's opinion, in its use for mass treatment to prevent new infections. Where nocturnal periodicity occurs the microfilarial content of the lungs is very high and these organs may prove to be the chief daytime hiding place of the microfilariae. Hetrazan has no effect on the microfilariae in hydrocoeles. R.T.L.

(248b) A fatal case of intestinal obstruction due to a mass of *Ascaris lumbricoides* weighing 2 kg. is reported. Zahawi's case (1938) of occlusion of the appendix by five adult ascaris is recalled. A case in which an adult worm half protruded from the lateral wall of the chest and one in which a hard swelling 1.5 cm. in diameter between the umbilicus and symphysis pubis and containing masses of larvae surrounded by granulation tissue, are briefly described. R.T.L.

249—Veterinary Medicine.

- a. ENZIE, F. D. & KURTPINAR, H., 1950.—"The effect of therapeutic and small daily doses of phenothiazine on the color of goat milk." 45 (9), 361-364, 372.
- b. MORGAN, B. B., POPE, A. & SORENSEN, D. K., 1950.—"The efficacy of lead arsenate for the common tapeworm of sheep." 45 (9), 370-372.

(249b) Lead arsenate, 1.0 gm. in gelatin capsules, administered by a balling gun, removed 100% of the *Moniezia expansa* from lambs, while 0.5 gm. removed only 62.9% and 68.5% in two groups. There were no toxic symptoms or gross lesions. The optimum dose and the possibility of cumulative toxic action of the lead arsenate require further investigation. R.T.L.

250—Veterinary Record.

- a. ROLLINSON, D. H. L., SOLIMAN, K. N. & MANN, K. H., 1950.—"Deaths in young ducklings associated with infestations of the nasal cavity with leeches." 62 (15), 225-227.
- b. PRIESTLEY, H., 1950.—"*Cysticercus bovis*." [Correspondence.] 62 (38), 569-570.
- c. MERLEN, H., 1950.—"*F. hepatica* and the tuberculin reaction." [Correspondence.] 62 (38), 570.
- d. ORR, D. E., 1950.—"*Cysticercus bovis*." [Correspondence.] 62 (39), 587.
- e. PEATT, E. S. W., 1950.—"War-time experiences with the R.A.V.C. and remarks on some of the diseases encountered." 62 (40), 591-596.

- f. TAYLOR, E. L., 1950.—"Verminous parasites and veterinary practice." 62 (43), 613-616; (45), 626. [Discussion p. 626.]
g. HARDWICK, E. F., 1950.—"*Cysticercus bovis*." [Correspondence.] 62 (45), 633.

(250a) Ten small leeches (*Proteolepsis tessellata*) were recovered from one young duckling, and three each from two others which had died without other obvious lesions or anaemia. Five out of 11 other ducklings which had been exposed for only one hour in an infested pond acquired infestations. Earlier records are cited. Two unpublished reports of infestation in mallard ducks and in a South American steamer duck are quoted.

R.T.L.

(250b) Using a technique which includes multiple incisions into the inner and outer masseter muscles, Priestley has found *Cysticercus bovis* in 483 out of 6,617 cattle slaughtered during the ten months December 1948 to September 1949 at Blackpool. He adds that at the present time the incidence is well over 6%. Inquiries showed that of 255 infected beasts, 146 had been bred in Great Britain, 43 had been bred in Ireland and forwarded direct to the slaughtering establishment, and 66 had been bred in Ireland but had been grazed in England and Scotland for some time before slaughter.

R.T.L.

(250c) It has been stated that cattle with *Fasciola hepatica* in the lungs react positively to intradermal and ophthalmic tuberculin tests. The lesions at post mortem show pyogenic organisms, but acid-fast bacteria are absent. Merlen asks for information about similar cases.

R.T.L.

(250d) Commenting on Priestley's letter on *Cysticercus bovis* [see No. 250b above] Orr suggests that a more thorough investigation would probably reveal an even higher percentage of infection. He assumes that in the natural course of events there will be a gradual recession in Britain until the outbreak reaches a minimum or dies out.

R.T.L.

(250e) In this account of his war experiences, Peatt notes that *Cysticercus bovis* and *C. cellulosae* were fairly common in India but not nearly so prevalent as in Syria. In one instance cysts were so numerous that in some of the predilection sites the blunt end of a pencil could not be placed between them. He recalls the embarrassment of an officer on seeing cysts in a piece of underdone steak which he was given at a luncheon party and which he ate to avoid humiliating his hostess. Hydatid cysts were also very common: in India over 70% of the livers of cattle and 35% of those of sheep and goats were condemned for this condition.

R.T.L.

(250f) This address was designed to stimulate discussion of a general nature on the position of veterinary practitioners in relation to helminth diseases. Taylor wonders if controlled experiments might disprove the theory that fits in puppies and an eczematous condition in dogs and cats are due to ascarid infections. He attributes the frequent reports of failure of phenothiazine to produce a response in outbreaks of parasitic gastritis in sheep and cattle to the variety of parasitic species involved and the tendency to use low doses on account of the expense. The failure of licks is attributed to the fact that stock will not take sufficient of the salt mixture. Experiments have shown that the daily administration of phenothiazine for 12 months to thoroughbred foals almost completely inhibits egg production and enables foals to be reared worm free. Controlled experiments give no support to the claim that anthiomaline is efficacious against husk.

R.T.L.

(250g) Over 170 cases of *Cysticercus bovis* have been reported so far this year from cattle slaughtered in northeast Scotland. A number of the infected animals were traced to the farms of origin but no evidence of human infection with *Taenia saginata* was obtainable. Hardwick suggests that further study might disclose a deviation in the life cycle and possibly reveal other hosts for the adult stage.

R.T.L.

251—Zeitschrift für Pflanzenernährung, Düngung, Bodenkunde.

- a. STÖCKLI, A., 1950.—“Über die quantitative Bestimmung der Bodennematoden.” 51 (1), 1–22.

(251a) Stöckli considers Overgaard's method of extracting nematodes from soil [for abstract see Helm. Abs., 17, No. 208a], giving special attention to a comparison of the method with results obtained by soil microscopy, and studying the sources of error, the influence of time, temperature and illumination, and of drying of the soil on the numbers of nematodes recovered. He finds that the nature of the soil strongly influences the efficiency of the method: many nematodes remain behind in clayey and in light silty soils, while counting is much hampered in soils with fine sediment which passes through the sieve. The effect of increasing the time of extraction varied with the type of soil. Results at temperatures of 16–20°C. were as good as at 26–30°C. Light intensity had no effect. Quick drying of soil had an injurious effect on the nematodes but in naturally dried soil they apparently survived and revived on re-moistening.

M.T.F.

252—Zentralblatt für Bakteriologie. Abteilung 1. Originale.

- a. SCHÜFFNER, W. & BOOL, J., 1950.—“Retrograde Oxyuren-Infektion, ‘Retrofektion’.” 155 (5/7), 229–234.
 b. LEGLER, F., 1950.—“Über eine neue Methode zur Zählung von Wurmeiern im Abwasser und im Stuhl.” 155 (5/7), 234–240.
 c. LEGLER, F., 1950.—“Zur Frage der Infiltrationsweite von Ascarideneiern im Erdboden bei Abwasserversickerung.” 155 (5/7), 294*–299*. [Discussion pp. 307*–309*].
 d. SEISER, A., 1950.—“Verwurmung und landwirtschaftliche Abwasserverwertung.” 155 (5/7), 299*–307*. [Discussion pp. 307*–309*].
 e. SCHÜFFNER, W., 1950.—“Die dritte Infektionsweg für Oxyuren die ‘Retrofektion’.” Schlussmitteilung.” 155 (8), 416.

(252a) In this final paper in their series on “retrofection” (re-entry of larvae via the anus after hatching) in enterobiasis, Schüffner & Bool give the results of their observations on the course of infection over a period of about two years. They show that chronic retrofection can be eliminated by the simple method of cleansing the peri-anal region three (exceptionally four) times daily. The fact that this frequent anal cleansing led to ever diminishing infection shows that, in adults with cleanly habits, digital infection is of no importance. Severe infections may result from untreated retrofection.

A.E.F.

(252b) Legler describes a technique for the quantitative determination of helminth ova in sewage and in stools by means of the “membrane filter” apparatus. Accurately measured quantities are finely broken down in water and passed through the filter. The filter disc is then either cut into strips and examined on slides or the whole disc is placed in a suitable petri dish and a count made microscopically. Discs of ordinary filter paper may be used in the apparatus instead of membrane filters. It is claimed that this method is successful where very few ova are present and that ova show up well against the white background of the filter.

A.E.F.

(252c) Legler has carried out experiments to determine how far *Ascaris* ova will penetrate into the soil from sewage percolation. The egg-counts were carried out by means of the membrane filter technique [see preceding abstract]. He found that a 2.5-cm. layer of humus is sufficient to prevent penetration of most of the ova and a 6-cm. layer is completely impenetrable. A 3-cm. layer of fine unsieved sand will prevent the passage of *Ascaris* ova, but sand consisting of grains 1–2 mm. in diameter allowed the passage of some ova even to a depth of 37–45 cm.

A.E.F.

(252d) Seiser discusses the alarming increase in human ascariasis in Germany and emphasizes the spread of infection by agricultural use of untreated or insufficiently treated sewage. Viable *Ascaris* ova are present in sewage to a greater degree than is commonly supposed and they can be destroyed only by suitable heat treatment. Seiser lists the

measures necessary to minimize risk of infection under (i) immediate measures and (ii) long-term measures. Under (i) he includes: prohibition of the manuring of all fruits and vegetables with sewage; prohibition of the use of untreated sewage for manuring ground to be used for rootcrops consumed raw; contents of cesspits to be used for manuring only after heat treatment; twice-yearly examination of agricultural workers for helminth infection; suitable propaganda. Under (ii) he includes: provision of sewage-treatment plants in rural areas; as far as possible no vegetables or fruits which are consumed raw to be cultivated in irrigation fields; provision of artificial manures for allotments and market gardens.

A.E.F.

(252e) [This paper has been published in full in *Zbl. Bakt.*, Abt. 1, Orig., 1950, 155 (5/7), 229-234. For abstract see No. 252a above.]

NON-PERIODICAL LITERATURE

- 253—CHITWOOD, B. G. & CHITWOOD, M. B., 1950.—“An introduction to nematology. Section I. Anatomy.” Washington, D.C.: B. G. Chitwood, viii+213 pp. [Revised edit.]

In this revised issue of Section I of “An Introduction to Nematology” the subject matter is dealt with in 13 chapters as follows: 1. Introduction; 2. General structure of nematodes; 3. The external cuticle and hypodermis; 4. Somatic musculature; 5. Cephalic structures and stoma; 6. Oesophagus and oesophago-intestinal valve; 7. The intestine or mesenteron; 8. The posterior gut; 9. The excretory system; 10. The reproductive system; 11. The nervous system; 12. Nemic ova; 13. Nemic relationships. The introductory chapter contains an outline classification in which the following new names are defined: *Pristionchinae* n.subf., *Drilonematoidea* n.superf., *Drilonematinae* n.subf., *Pharyngonematinae* n.subf., *Ungellidae* n.fam., *Nacobbinae* n.subf., *Dolichodorinae* n.subf.

T.G.

- 254—PFLUGFELDER, O., 1950.—“Zooparasiten und die Reaktionen ihrer Wirtstiere.” Jena: G. Fischer, viii+198 pp., DM. 12.

This monograph by Pflugfelder deals with the host-parasite relationship of protozoa, helminths and arthropods, chiefly from the immunobiological aspects. There are 1,060 references to the literature.

A.E.F.